

MANUFACTURERS' RECORD

A
WEEKLY SOUTHERN INDUSTRIAL
RAILROAD AND FINANCIAL NEWSPAPER.

GRAIN AT GULF PORTS.

[Railway World.]

Two Gulf ports—New Orleans and Galveston—for the eight months ending August, 1903, show a total increase in grain receipts equal to over 124 per cent. For the same period the increase of grain receipts at the four North Atlantic ports of Boston, New York, Philadelphia and Baltimore was a little over 20 per cent. Expressed in bushels, the two Gulf ports received 16,829,492 for the eight months ending August, 1902, and 37,702,636 for the corresponding eight months of the present year, an increase of 20,872,134 bushels. The four North Atlantic ports received 132,469,474 bushels for the eight months ending August, 1902, and 159,998,276 bushels for the corresponding period of 1903, an increase of 27,528,802 bushels. * * * Nebraska and Kansas are also much closer to the Gulf of Mexico than to New York or Philadelphia. The wheat exports of this section naturally take the Southern route. The distance is shorter, the grades easier and the possibilities of return freight are larger than on the long haul to the Atlantic seaboard. From 1897 to 1901 the wheat exports of Galveston and New Orleans increased from 17.6 million to 40.1 million bushels, 41 per cent. of the total increase from the United States during this period. The Southern railroads have fostered this southward movement of grain by favorable rates and by enlarging their terminal facilities.

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 254.

VOL. XLIV.
No. 13.

\$4.00 per year
Single Copy
10 Cents.

Baltimore, October 15, 1903.

NILES Electric Traveling CRANES.



Niles-Bement-Pond Co.

136-138 Liberty Street,

Crane Shops:
PHILADELPHIA, PA.

NEW YORK.

Prompt Deliveries.

NEW YORK:

136-138 Liberty Street.

BOSTON:

144 Pearl Street.

CHICAGO:

Western Union Building.

PITTSBURG:

Frick Building.

ST. LOUIS:

316 N. 3d Street.

The Marion Steam Shovel Company,

MANUFACTURERS
OF

Steam Shovels,
Ballast Unloaders,
Dredges and Ditchers, Etc.

We manufacture machinery in this line in all sizes and suitable for all classes of work. Where large capacity is wanted and where exceedingly hard material is encountered, we call special attention to Model "80" and Model "90." We invite the most careful investigation. For full information address

THE MARION STEAM SHOVEL COMPANY,

Marion, Ohio, U. S. A.,

or GEO. W. BARNHART, Western Manager, No. 4 Sutter Street, SAN FRANCISCO, CAL.

Interstate Corporation Record

contains Subscription List, Charter, By-Laws, First Meeting of Stockholders, First Meeting of Directors, Secretary's Minutes, Certificate, Register, Transfer and Dividend Records, Stock Ledger.

American National Bank Record

No. 1—for Bank's use when newly organized; No. 2—for conversion of state banks into national.

Stock Certificates, Bonds, Seals,

U. S. Lock Seal with Two Keys.

J. W. Middleton & Co., Publishers, Stationers,

167 Dearborn Street, CHICAGO.

Newport News Shipbuilding & Dry Dock Co.

WORKS AT NEWPORT NEWS, VA., ON HAMPTON ROADS.

Equipped with two large Basin Dry Docks of the following dimensions:

| | No. 1. | No. 2. |
|----------------------------------|-----------|-----------|
| Length on top | 610 feet. | 327 feet. |
| Width on top | 180 " | 162 " |
| Width on bottom | 50 " | 50 " |
| Brought of water over sill | 25 " | 30 " |

Shops are equipped with modern machinery capable of doing the largest work required in ship construction. Tools driven by electricity and compressed air used in constructing and repairing vessels. For estimates and further particulars, address,

C. B. ORCUTT, Pres't,

No. 1 Broadway, New York.



Sinclair Ironers are the First and Best. **Sinclair Washers** are the Latest and Best.

S. H. SINCLAIR CO.

F. A. Walker, Pres.
Henry H. Horr, Treas.
W. G. Saunders, Secy.

Manufacturer of LAUNDRY MACHINERY,
8 and 10 S. Canal St., CHICAGO, ILL.

Write for Catalogue "R."

Estimates cheerfully furnished.

"THE COLUMBIA"

MODERN LAUNDRY MACHINERY.

Latest. "Up to date." "Prices Right."

Wilson Laundry Machinery Company.

Send for Catalog R. Columbia, Pa.

LAUNDRY MACHINERY, HAND OR POWER.

For Hotels, Dyehouses, Commercial Laundries and Domestic Use.
Write for Prices. A. L. DAWSON & CO., 27-31 W. Washington St., Chicago.

SHARP'S Latest Styles Ironing & Washing Machinery

Complete Plants Supplied.

ADAMS LAUNDRY MACHINERY CO., 1931-1937 6th Ave., Troy, N. Y.



WHEN
NEEDING

Wheelbarrows

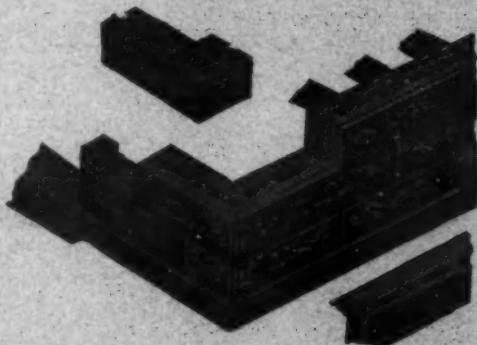
EXAMINE OURS.

Strong, True-Running Wheels. No superfluous parts. Securely bolted. Popular with their users. A pleasure to the pusher. Handled by every Hardware house in the South.

KILBOURNE & JACOBS MFG. CO.,

Columbus, O.

HARMON S. PALMER'S METHOD OF CONCRETE BUILDING.



A Perfect System
of Construc-
tion—

By the use of Hollow Concrete Building Blocks, produced by hand labor with new scientific and geometrically constructed machines, which pre-determine the building, obviate cutting the stone and fitting the frame, do away with the steel square and effectually supersede all methods by their wonderful simplicity.

Reward \$10—A reward of Ten Dollars given for first information of parties building with these blocks or using machines or presses that can make them, unless licensed by the Harmon S. Palmer Hollow Concrete Building Block Co., 1401 Binney Street, Washington, D. C.



LUFKIN
Steel Tapes

ARE INDISPENSABLE FOR ACCURATE WORK

The Lufkin Rule Co., - - Saginaw, Mich.

For Sale Everywhere. Send for Catalogue.

AMERICAN SHIP WINDLASS CO., - - Providence, R. I.

The "Providence" Windlasses, Capstans, Winches and other Ship Machinery.

Automatic Steam Towing Machines, Wharf Drop Clearing, Etc.

We have just completed a New Up-To-Date Iron Foundry and are prepared to supply

FIRST-CLASS CASTINGS.



We Make Only Tanks and Vats.

But we make these for all purposes—Railroads, Waterworks, Mills, Factories, Mines, Hotels, Tanneries, Distilleries and Breweries.

G. M. DAVIS & SON, Palatka, Fla.

Branch Office—26 Cortlandt St., New York City.

3.

a.

ding.

etc.

rial

A.,

keys,

ors,

NG.

stem

ic-

Concrete
duced by
cientific
nstructed
etermined
etting the
rame, did
asure and
methods
licity.

ling with
e licensed
ton, D. C.

N

S

WORK

ch.

R. I

, Etc.

ity



C

A

A

B

W

W

D

C

R

V

P

R

P

H

W

W

A

B

H

I

M

P

R

S

W

P

P

S

B

H

S

V

H

R

A

M

C

D

O

M

M

P

R

S

W

W

B

B

C

E

G

L

S

S

V

C

C

S

A

G

I

A

B

C

F

C

E

F

G

H

I

M

M

M

M

M

P

R

S

T

U

U

W

B

G

M

O

P

A

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

Classified Index of Articles Advertised

For ALPHABETICAL
INDEX See Page 37.

Accountants.
Appraisal & Audit Co. of America, Chicago, Ill.
Audit Co. of New York, The New York, N. Y.
Zell, Bobb, Ross, Birmingham, Ala.

Accumulators.
Bushnell Press Co., G. H., Thompsonville, Conn.
Watson-Hillman Co., New York, N. Y.
Wood, E. D. & Co., Philadelphia, Pa.

Acetylene Gas Generators.
Davis Acetylene Gas Co., Elkhart, Ind.

Acid Chambers.
Caroline Iron Works, Baltimore, Md.
Robertson Mfg. Co., James, Baltimore, Md.
Valk & Murdoch Co. Iron Works, Charleston, S. C.

Agents. (Manufacturers)
Price, S. M., Machinery Co., Norfolk, Va.
Roberts, J. J., & Co., Newport News, Va.

Agricultural Implements.
Farouhar Co., Ltd., A. E., York, Pa.
Hensch & Drought Co., York, Pa.

Air Brakes.
Westinghouse Air Brake Co., Pittsburgh, Pa.
Westinghouse Traction Brake Co., New York, N. Y.

Air Compressors.
American Air Compressor Works, New York, N. Y.
Brown-Cochran Co., Lorain, Ohio.
Hardie-Tynes Mfg. Co., Birmingham, Ala.
Ingersoll-Sergeant Drill Co., New York, N. Y.
McKiernan Drill Co., New York, N. Y.
Price, S. M., Machinery Co., Norfolk, Va.
Rand Drill Co., New York, N. Y.
Stilwell-Bierce & Smith-Valle Co., Dayton, O.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., New York, N. Y.

Aluminum Products. (Bars, Sheets, Tubes, etc.)
Pittsburg Reduction Co., Washington, D. C.

Ammunition.
Peters Cartridge Co., Cincinnati, O.

Angle Power Transmitter.
Standish, A., Estate, Columbus, O.

Anti-Friction Metals.
Bailey-Lobby Co., Charleston, S. C.
Hertz, Theo., Metal Co., St. Louis, Mo.
Ryan, J. J., & Co., Chicago, Ill.
Van Duzen, E. W., Co., Cincinnati, O.

Antimony.
Hertz, Theo., Metal Co., St. Louis, Mo.
Ryan, J. J., & Co., Chicago, Ill.

Appraisers. (Mfg. Plants, etc.)
Appraisal & Audit Co. of America, Chicago, Ill.
Myers, Finney & Morrison, Richmond, Va.

Architects.
Carlton, Charles W., & Co., Atlanta, Ga.
Dyer, D. H., & Son, Fall River, Mass.
Gasser, Paul, Tampa, Fla.
McMichael & Hunter, Charlotte, N. C.
Makenson, C. E., & Co., Providence, R. I.
Milburn, Frank E., Columbia, S. C.
Pratt, C. A. M., & Co., Providence, R. I.
Ramsey, John E., & Co., Salisbury, N. C.
Shaw, Fred, G., Augusta, Ga.
Sheffield, O. H., & Co., Atlanta, Ga.
Wheeler, W. B. & Co., Columbia, S. C.
Wheeler & Bunge, Charlotte, N. C.

Architectural Iron Work.
Belmont Iron Works, Philadelphia, Pa.
Buffalo Wire Works Co., Buffalo, N. Y.
Chesapeake Iron Works, Balto., Md.
Eureka Supply Co., Chattanooga, Tenn.
Gainesville Iron Works, Gainesville, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Sanford-Day Iron Works, Knoxville, Tenn.
Schreiber, L., & Sons Co., The, Cincinnati, O.
Virginia Bridge & Iron Co., Roanoke, Va.

Art Glass.
Capital City Art Glass Works, Atlanta, Ga.

Asbestos.
Southern Pipe Covering Co., Richmond, Va.

Asphalt.
Armstrong Mfg. Co., Richmond, Va.
Gulf Refining Co., Pittsburgh, Pa.

Babbit Metal. (See Anti-Friction Metal.)

Bags, Rope and Twine.
American Mfg. Co., New York City.
Bailey, John T., & Co., Philadelphia, Pa.
Columbian Cordage Co., Auburn, N. Y.

Balls. (Steel.)
Federal Mfg. Co., Cleveland Ball Factory, Cleveland, O.

Bankers and Brokers.
Continental Trust Co., Baltimore, Md.
Exchange Bank, Macon, Ga.
First National Bank, Richmond, Va.
Fisk & Robinson, New York, N. Y.
Georgia Building Bank, Augusta, Ga.
Hambleton & Co., Baltimore, Md.
Hibernia Bank & Trust Co., New Orleans, La.
Hornaday, J. P., & Co., Cincinnati, O.
International Trust Co., Baltimore, Md.
Landon, F. J., & Co., New York, N. Y.
MacRae, Hugh, & Co., Wilmington, N. C.
Maryland Trust Co., Baltimore, Md.
Martin & Bro., Augusta, Ga.
McAdoo, Calvin N., Greensboro, N. C.
Merchants & Farmers Nat'l Bk., Charlotte, N. C.
Merchants National Bank, Baltimore, Md.
Middendorf, J. Wm., & Co., Baltimore, Md.
Palmetto Bank & Trust Co., Columbia, S. C.
Richmond Trust & Safe Deposit Co., Richmond, Va.
Savannah Trust Co., Savannah, Ga.
Landon, Henry W., Spartanburg, S. C.
Tobey & Kirk, New York, N. Y.
Trask, Spencer, & Co., New York, N. Y.
U. S. Mortgage & Trust Co., New York, N. Y.
Williams, John L., & Sons, Richmond, Va.

Bar Iron and Steel.
Bourne-Puller Co., Cleveland, O.
Globe Rolling Mill, Cincinnati, O.
Milton Mfg. Co., Milton, Pa.
Old Dominion Iron & Nail Works Co., Richmond, Va.
Pascall Steel Co., Paterson, N. J.

Belting.
Alexander Bros., Philadelphia, Pa.
American Supply Co., Providence, R. I.
Bailey-Lobby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Boston Belting Co., Boston, Mass.
Caldwell, H. W., & Son Co., Chicago, Ill.
Cameron & Barkley Co., Charleston, S. C.
Columbia Supply Co., Columbia, S. C.
Cotton States Belting & Supply Co., Atlanta, Ga.
Freese, E. M., & Co., Gallien, O.
Gandy Belting Co., Baltimore, Md.
Hartfelder-Garbutt Co., Savannah, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Main Belting Co., Philadelphia, Pa.
Mader's, Joseph, Sons, New York, N. Y.
Miller Oil & Supply Co., Indianapolis, Ind.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peelless Rubber Manufacturing Co., New York, N. Y.
Price, S. M., Machinery Co., Norfolk, Va.
Rummonds-Bedaway Belting & Hose Co., Newark, N. J.
Shells Belting Co., St. Louis, Mo.
Voorhes Rubber Mfg. Co., Jersey City, N. J.
Whitehurst Belting Co., Baltimore, Md.

Belting. (Chain.)
Bartlett C. O., & Snow Co., Cleveland, O.
Caldwell, H. W., & Son Co., Chicago, Ill.
Federal Mfg. Co., Cleveland, Ohio.
Jeffrey Manufacturing Co., Columbus, O.
Link-Belt Engineering Co., Nictown (Phila.), Pa.
Taylor Iron & Steel Co., High Bridge, N. J.

Belt Fasteners.
American Supply Co., Providence, R. I.

Belt Lacing.
Shells Belting Co., St. Louis, Mo.

Belt Lacing Machines.
Diamond Drill & Machine Co., Hidesboro, Pa.

Belt Preserver.
Shells Belting Co., St. Louis, Mo.

Blower. (Argand Steam.)
McClave-Brooks Co., Scranton, Pa.

Blowers. (Pressure.)
Allington & Curtis Mfg. Co., Saginaw, E. S. Mich.
American Blower Co., Detroit, Mich.
Dixie Mfg. Co., Baltimore, Md.
Hartford Co., S. F., Boston, Mass.

Blowers and Exhaust Fans.
Allington & Curtis Mfg. Co., Saginaw, E. S. Mich.
American Blower Co., Detroit, Mich.
Andrews & Johnson Co., Chicago, Ill.
Cincinnati Exhaust & Blow Pipe Co., Cincinnati, O.
Crosby St. Gage & Valve Co., Boston, Mass.
Dixie Mfg. Co., Baltimore, Md.
Hartford Blower Corp., Hartford, Conn.
Southwark Foundry & Machine Co., Falls, Pa.
Socker, George J., St. Louis, Mo.
Starveant Co., S. F., Boston, Mass.

Blue Print Apparatus.
Pittsburg Blue Print Co., Pittsburgh, Pa.

Blue Prints.
Blanks, Ewald G., Baltimore, Md.
Myers, Finney & Morrison, Richmond, Va.

Boilers.
Sherwood Hobbin & Mfg. Co., Greensboro, N. C.

Boilers. (Pressure.)
Alexander, S. B., Jr., Co., Charlotte, N. C.
Alas Engine Works, Indianapolis, Ind.
Babcock & Wilcox Co., New York, N. Y.
Baltimore Engine Co., Baltimore, Md.
Brownell & Co., The, Dayton, O.
Cameron & Barkley Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Codd Co., E. J., Baltimore, Md.
Cooper, C. & Co., Mt. Vernon, O.
Farquhar Co., Ltd., A. E., York, Pa.
Frier Co., Waynesboro, Pa.
Gibbs, W. H., & Co., Columbia, S. C.
Hartfelder-Garbutt Co., Savannah, Ga.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Leffel, James, & Co., Springfield, Ohio.
Lombard Iron Works & Supply Co., Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murphy, John H., New Orleans, La.
Murray Iron Works Co., Burlington, Iowa.
Petroleum Iron Works Co., Washington, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Price, S. M., Machinery Co., Norfolk, Va.
Robbins, O. A., Charlotte, N. C.
Savannah Locomotive & Car Works, Savannah, Ga.
Schafels, J. S. Sons Co., Macon, Ga.
Smith-Courtesy Co., Richmond, Va.
Southern Eng. & Boiler Works, Jackson, Tenn.
Stirling Co., Chicago, Ill.
St. Louis Iron & Machine Works, St. Louis, Mo.
Union Iron Works Co., Selma, Ala.
Valk & Murdoch Iron Works, Charleston, S. C.
Vogt, Henry, Machine Co., Louisville, Ky.
Waite, Henry Co., Norfolk, Va.

Boiler Fine Scrapers. (See Fine Scrapers.)

Boiler Tube Cleaners.
Gem Mfg. Co., Pittsburgh, Pa.

Bolts, Nuts, Rivets and Studs.
Hamel, John J., & Co., Pittsburgh, Pa.
Milton Mfg. Co., Milton, Pa.
Hoopes & Townsend Co., Philadelphia, Pa.
Old Dominion Iron & Nail Works Co., Richmond, Va.
The Diamond State Steel Co., Wilmington, Del.

Bonds. (Fidelity.)
Fidelity & Deposit Co., Baltimore, Md.

Bookbinders.
Andel, Theo., & Co., New York, N. Y.

Bottling Outlets.
Viller Mfg. Co., Milwaukee, Wis.

Brakes.
Westinghouse Traction Brake Co., New York, N. Y.
Westinghouse Air Brake Co., Pittsburgh, Pa.

Brass. (Sheet, Rod and Wire.)
Waterbury Brass Co., New York, N. Y.

Brass Goods.
Bailey-Lobby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
General Fire Extinguisher Co., Providence, R. I.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Lunkenheimer Co., Cincinnati, O.
Price, S. M., Machinery Co., Norfolk, Va.
Simmons, John Co., New York City.
Van Duzen, E. W., Co., Cincinnati, O.

Brass Specialties. (Rivets, Ferrules, etc.)
Waterbury Brass Co., New York, N. Y.

Brewers' Machinery.
Viller Mfg. Co., Milwaukee, Wis.

Brick.
Georgia Vitified Brick & Clay Co., Augusta, Ga.
Kriegshaber, V. H., Atlanta, Ga.
Fowhan Clay Mfg. Co., Richmond, Va.

Brick Roads.
Union Brick Road Co., Pittsburgh, Pa.

Brick and Clayworking Machinery and Supplies.
Carnell, George, Philadelphia, Pa.
Fernholz Brick Machinery Co., St. Louis, Mo.
Freese, E. M., & Co., Gallien, O.
Gibbs, W. H., & Co., Columbia, S. C.
Huesner, H., & Co., New York, N. Y.
Schwartz System Brick Co., New York, N. Y.
Steele, J. C., & Sons, Statesville, N. C.
St. Louis Iron & Machine Works, St. Louis, Mo.

Bricks.
Belmont Iron Works, Philadelphia, Pa.
General Supply & Construction Co., New York, N. Y.
Easton Foundry & Machine Co., Easton, Pa.
Frink & Hazen, Baltimore, Md.
Pascall Steel Co., Paterson, N. J.
Seafie, Wm. B., & Sons Co., Pittsburgh, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.

Buckets. (Coal.)
Hawson & Morrison Mfg. Co., Cambridge, Boston, Mass.

Buckets. (Excavators.)
Hayward Co., New York, N. Y.

Buckets. (G. L., Iron Works, Long Island City, N. Y.)
Stoebner, G. L., Iron Works, Long Island City, N. Y.

Buckets. (Ore.)
Link-Belt Engineering Co., Nictown, Phila., Pa.
Stoebner, G. L., Iron Works, Long Island City, N. Y.

Building Blocks (Hollow Concrete) & R. H. Mch.
Palmer, Harmon S., Hollow Concrete R. H. Co., Washington, D. C.

Building Supplies.
Armstrong Mfg. Co., Richmond, Va.
Barrett Mfg. Co., Philadelphia, Pa.
Bird, Wm., & Co., Charleston, S. C.
Kriegshaber, V. H., Atlanta, Ga.
Maryland Lime & Cement Co., Baltimore, Md.
Warner, Charles Co., Wilmington, Del.

Burris.
Bailey, John T., & Co., Philadelphia, Pa.

Bushings. (Graphite and Bronze.)
Granite Lubricating Co., Bound Brook, N. J.

Cableways. (Wire Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.
Constructors, Plant Mfg. Co., Buffalo, N. Y.
Flory, B. Mfg. Co., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Hawson & Morrison Mfg. Co., Cambridge, Boston, Mass.
Reebing's Sons Co., John A., Trenton, N. J.
Trenton Iron Co., Trenton, N. J.

Calcium Chloride.
Carbondale Chemical Co., Carbondale, Pa.

Cannamakers' Machinery.
Niagara Machine & Tool Works, Buffalo, N. Y.

Canning Machinery.
Sprague Canning Machinery Co., Chicago, Ill.

Canning Supplies.
Sprague Canning Mch. Co., Chicago, Ill.

Capstans. (HAND AND STEAM, ELECTRIC, HORSEPOWER.)
American Ship Windlass Co., Providence, R. I.

Card Clothing.
American Supply Co., Providence, R. I.

Carriage and Wagon Hardware.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

The CROSS
OIL FILTER

is guaranteed to save you
one-half of the cost of
your lubricating oil.

If it doesn't do this for
you, it will not cost you a
cent.

Write today for one on
trial 30 days, and if not
exactly as represented re-
turn at our expense.

"The Filter purchased from you recently is giving perfect satis-
faction, and does all you claim for it."

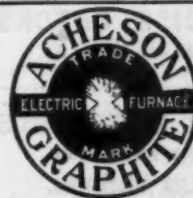
TRENTON (N. J.) RUBBER MFG. CO.

THE BURT MFG. CO.

Largest Mfrs. of Oil Filters in the World,

Akron, Ohio, U. S. A.

Supplied also by Oil Companies, Engine Builders and
Power Contractors.

ACHESON
GRAPHITE

Manufactured in the Electric Furnace. Write us for full information
regarding the use of this material in high grade protective
coatings, lubricating compounds, pipe joint compounds, as foundry
facings, for electrotyping purposes, etc.

INTERNATIONAL ACHESON GRAPHITE CO., Niagara Falls, N. Y., U. S. A.



LARGEST DOOR IN THE WORLD

MINNEAPOLIS
STEEL ROLLING DOORS
SHUTTERS

— SEND FOR CATALOGUE —

THE KINNEAR MFG. CO. COLUMBUS, OHIO, U. S. A.

BOSTON NEW YORK CHICAGO PHILADELPHIA

OPERATES WITH PERFECT EASE. 85 WATER ST. 45 VESEY ST. 112 CLARK ST. 1011 CHESTNUT ST.

COPPER ANTI-FRICTION METAL

For General Machine
Shop, Mill and
Foundry Use.



Runs nicely and is highly recommended
by users everywhere. A trial will con-
vince you of its merits.
THEODORE HERTZ METAL CO.
St. Louis, Mo.

SAND-BRICKS.

Every "Sandbank or Sandhill" is the best place for a "Brickyard." No
need of clay, dryers or kilns to produce a strong, sound, perfect "Face Brick" and at a
lower cost than common clay bricks are usually produced, out of sand and a small percentage
of lime, in ten hours, in any weather, winter or summer.

114-118 LIBERTY ST., NEW YORK. H. HUENNEKES & CO. 114-118 LIBERTY ST., NEW YORK.

are erecting and equipping factories of any capacity in any locality of the United States
Canada, Mexico, Cuba and South America under their patented process known as

"HUENNEKES SYSTEM"

Factories in operation in different sections of the United States and
in other countries. Any size, shape or color of bricks produced under this system
and every brick perfect. Besides factories in operation there are now being erected other fac-
tories under our system from Montreal, Canada, throughout the United States to Monterey,
Mexico. FACTS ARE BETTER PROOFS THAN TESTIMONIALS, and seeing one of our factories
in operation is to believe that our system is a thorough success and a big money maker.
Write for illustrated pamphlet and particulars.

MANY STARS
but only one
Jupiter.
Many steam traps,
but only one



Heintz Steam Trap.

It pays its way in coal-saving in six months. It makes your plant do more and better work, and it lasts a lifetime. Proof before pay. Send for booklet "1."

WILLIAM S. HAINES CO.
136 South Fourth Street, Philadelphia.

THE SUN SMITES

down on exposed metal and wood, eating the very life out of ordinary paint; your pocket tells the story.

Wisconsin Graphite Roof and Stack Paint

is never affected by rust, acid, water, heat nor cold. WE know this, so can YOU—free—write for samples.

Wisconsin Graphite Company,
PITTSBURG, PA.

THE SAFETY
Car Heating & Lighting Co.
160 Broadway, New York.

CAR LIGHTING
By the Plutch System.

CAR HEATING
By Steam Jacket System,
Hot Water Circulation,
Return and Direct Steam
Systems.

AUTOMATIC STEAM COUPLERS.



PROTECTION

The Waggoner Watchman Clock
Safeguards Your Property Against Fire or disturbances or indolence of watch men. Shipped on 30 days' FREE trial.

Reduces Insurance

Interesting Booklet Free. It is called "Common Sense For Business Men." We make Sanatory Chemical Fire Pails.

The Waggoner Watchman Clock Co.
GRAND RAPIDS, MICHIGAN

Imhauser's Watchman's Time Detectors.
Cannot fail.
Write for Catalogue.



Made with 12 or 24 different keys. Contain all the modern improvements. Warranted in every way. Cannot be tampered with without detection.

MANUFACTURED BY
E. IMHAUSER & CO., 206 Broadway, New York.


**My Letters Make
Good Castings.** 2

Foundrymen and Patternmakers everywhere use them. Made in many sizes and styles and of lead composition or brass. Wholesale or retail and at low prices. Samples free.

A. W. BRIM, Seneca Falls, N. Y.

FACTORY TIME CHECKS.
They are being used more and more. Write for our pamphlet, "Time Checks and Their Use." We also make

MERCHANDISE CHECKS.
AMERICAN RAILWAY SUPPLY CO.
Address Dept. J. 24 Park Place, New York.



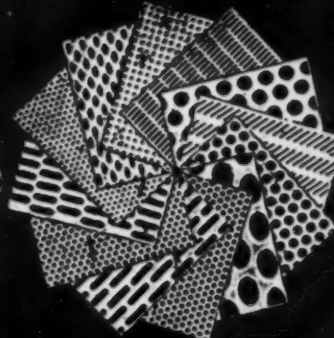
Watchman's Time Detectors,
LATEST IMPROVED.
With Safety Lock Attachments.
Portable and Electric.

For any number of stations. Give an exact record of the night watchman's rounds. Insurance rates reduced.
Write for circulars and full particulars to
B. NANZ, 127 Duane St., N. Y.

Perforated Metals

Steel, Iron, Copper, Zinc, Brass, Tin and
All Other Metals

PERFORATED AS REQUIRED.



FOR
Cotton, Woolen, Paper and Pulp Mills, Rice, Flour and
Cotton Seed Oil Mills, Sugar Houses, Filter Presses, Mining and Grain Cleaning Machinery, Stone, Coal and Ore
Screens, Brick and Tile Works, Filters, Gas and Water Works,
Etc. Standard Sizes Perforated Tin and Brass always in Stock.

The HARRINGTON & KING PERFORATING CO.
EASTERN OFFICE: 114 LIBERTY ST., N.Y. Main Office & Works, 234 N. Union St., CHICAGO, ILL.

THE ROBINSON OILS

"they lubricate more, and outlast other oils."

High-Grade,
Cylinder, Engine, Spindle,
Dynamo Oils.

Oils for all types of Machinery.
GREASES.

WM. C. ROBINSON & SON CO.
217 South St., BALTIMORE, MD.

Conveying, Elevating and Power Transmitting Machinery

A COMPLETE LINE OF THE BEST.

Caldwell Helicoid Conveyor!

**CALDWELLS
HELICOID**

The only perfect spiral conveyor with continuous flight—no laps or rivets.

Seamless Steel Elevator Buckets, Elevator Boots, Rope Transmission Machinery, Sprocket Wheels, Link Belting, Shafting, Belting, Hangers, Pulleys, Gears, Carpullers, Automatic Power Grain Shovels, Wood Split Pulleys, Wire Cloth, Perforated Metal.

Complete Equipments for handling materials of all kinds.

H. W. CALDWELL & SON COMPANY,
Our New Catalogue No. 26 (440 Pages, Cloth Bound), will be sent Upon Request.

EASTERN SALES AND ENGINEERING OFFICE, 410-95 Liberty St., New York, N. Y. SOUTH-EASTERN SALES AND ENGINEERING OFFICE, 411 Prudential Bldg., Atlanta, Ga.
SOUTH-WESTERN SALES AND ENGINEERING OFFICE, 262 Trust Bldg., Dallas, Tex.

Western Avenue, 17th to 18th Streets,
CHICAGO, ILL.

Classified Index of Articles Advertised

FOR ALPHABETICAL
INDEX See Page 33

Cars. (Mine, Dump and Logging.)
Austin Mfg. Co., Chicago, Ill.
Clark & Hines, Baltimore, Md.
Continental Equipment Co., New York, N. Y.
Jackson Manufacturing Co., Harrisburg, Pa.
Kilbourne & Jacobs, Mfg. Co., Columbus, O.
Koppel, Arthur, New York City.
Link-Belt Engineering Co., Philadelphia, Pa.
Wales (M. Th.), Portland, O.
Peacock Iron Works, Selma, Ala.
Sanford-Day Iron Works, Knoxville, Tenn.
Savannah Loco. Wks. & Supply Co., Savannah, Ga.
Steele, J. C. & Sons, Stateville, N. Y.
Stuebner G. L., Iron Works, Long Island City, N. Y.
Union Iron Works, Selma, Ala.
Worham-Magor Engine Works, New York, N. Y.

Cars. (Passenger and Freight.) (See Railroad Equipment and Supplies.)

Car Building Machinery.
Fay, J. A., & Sons Co., Cincinnati, O.
Car Components and Machinery.
Chester Steel Castings Co., Philadelphia, Pa.
Lafayette Steel & Coupler Co., Philadelphia, Pa.
Safety Car Heating & Lighting Co., New York, N. Y.

Car Lighting and Heating.
Safety Car Heating & Lighting Co., New York, N. Y.

Car Seals. (Lead.)
Hertz, Theo. Metal Co., St. Louis, Mo.

Car Wheels, Axles and Trucks.
Koppel, Arthur, New York, N. Y.
Macintyre, J. H. & Co., Suffolk, Va.
Peacock Iron Works, Selma, Ala.
Sanford-Day Iron Works, Knoxville, Tenn.
Union Iron Works Co., Selma, Ala.

Casters and Caster Wheels.
Standard Caster & Wheel Co., New York, N. Y.

Castings. (Brass and Bronze.)
Alabama Iron Works, Mobile, Ala.
Lankenshimer Co., Cincinnati, O.
Phosphor Bronze Shelling Co., Ltd., Phila., Pa.
Richmond Pattern Works, Richmond, Va.
Ryan, J. J., & Co., Chicago, Ill.
Van Dusen, E. W. Co., Cincinnati, O.

Castings. (Aluminum.)
Pittsburg Reduction Co., Washington, D. C.
Ryan, J. J., & Co., Chicago, Ill.

Castings. (Iron.)
Alabama Iron Works, Mobile, Ala.
American Ship Windlass Co., Providence, R. I.
Chattanooga Rolling & Fdry. Co., Chattanooga, Tenn.
Dunmick Pipe Co., Birmingham, Ala.
Easton Foundry & Machine Co., Easton, Pa.
Hamorgan Pipe & Foundry Co., Lynchburg, Va.
Kriegshaber, V. H., Atlanta, Ga.
Lonsard Iron Works & Supply Co., Augusta, Ga.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Maryland Fdry. & Mch. Co., Baltimore, Md.
Richmond Pattern Works, Richmond, Va.
Rose-Meehan Fdry. Co., Chattanooga, Tenn.
Sanford-Day Iron Works, Knoxville, Tenn.
Tompkins, D. A., Co., Charlotte, N. C.
Valley Iron Works, Williamsport, Pa.
Westbrooks, J. B., Fdry. & Mch. Co., Danville, Va.
Wood, B. D., & Co., Philadelphia, Pa.

Castings. (Malleable Iron and Steel.)
Chester Steel Castings Co., Chester, Pa.
Rose-Meehan Fdry. Co., Chattanooga, Tenn.

Castings. (Steel.)
Chester Steel Castings Co., Chester, Pa.
Diamond Drill & Machine Co., Birdsboro, Pa.
Normann-Duffke Fdry. Co., Milwaukee, Wis.

Ceilings. (Metal.)
Fenn Metal Ceiling & Roofing Co., Phila., Pa.

Cement.
American Cement Co., Philadelphia, Pa.
Bird, W. M., & Co., Charleston, S. C.
Carolina Port. Cement Co., Charleston, S. C.
Cumber, Hyd. Cement & Mfg. Co., Cumberland, Md.
French, Samuel H., & Co., Philadelphia, Pa.
General Supply & Construction Co., New York, N. Y.
Gilbert, C. M., & Co., Savannah, Ga.
Harriman Cement Co., Wm. G., Philadelphia, Pa.
Kelley Island Lime & Transport Co., Cleveland, O.
Kriegshaber, V. H., Atlanta, Ga.
Maryland Cement Co., Baltimore, Md.
Maryland Lime & Cement Co., Balto., Md.
Mobile Coal Co., Mobile, Ala.
Ridgmont Cement Mfg. Co., Ironville, Va.
Southeastern Lime & C. Co., Charleston, S. C.
St. Louis Portland Cement Co., St. Louis, Mo.
Warner Co., Chas., Wilmington, Del.

Cement Machinery.
Bradley Pulverizer Co., Boston, Mass.
Kent Mill Co., New York, N. Y.
Osborn Engineering Co., Cleveland, O.
Soudth, F. L., & Co., New York, N. Y.

Cement Plant Designers.
Osborn Engineering Co., Cleveland, O.

Chain Hoists.
Spidel, J. G., Reading, Pa.

Chains.
Case Mfg. Co., Columbus, O.
Chillicothe-Evans Chain Co., Allagheeny, Pa.
Empire Chain Co., Pittsburgh, Pa.
Federal Mfg. Co., Diamond Chain Fcty., Indianapolis, Ind.
Greenwald Co., I. & E., Cincinnati, O.
Indiana Chain Works, Jeffersonville, Ind.
Jeffrey Mfg. Co., The, Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
N. J. Foundry & Machine Co., New York, N. Y.

Chairs (Invalids.)
Allison, W. D., Co., Indianapolis, Ind.

Chandeliers.
Electric Supply Co., Savannah, Ga.
Polacheck, Charles & Bro., Milwaukee, Wis.

Charcoal. (Filtering.)
Obermayer Co., S. Cincinnati, O.

Charcoal. (Fuel.)
Matheson, J. A., Georgetown, S. C.

Cheeks. (Factory Time and Merchandise.)
American Railway Supply Co., New York, N. Y.

Chemists.
Oatlett, Chas., Staunton, Va.
Froehling & Robertson, Richmond, Va.
Frank Laboratory, N. F., Atlanta, Ga.

Chloride of Calcium.
Carbondale Chemical Co., Carbondale, Pa.

Chucks.
Horse Twist Drill & Machine Co., New Bedford, Mass.
Skinner Chuck Co., New Britain, Conn.
Whitton Machine Co., D. E., New London, Conn.

Clocks. (Watchman's and Town.)
Imhauser & Co., E., New York, N. Y.
Nant, B., & Co., New York, N. Y.
Waggoner Watchman Clock Co., Grand Rapids, Mich.

Coal.
Alabama Coal & Iron Co., Birmingham, Ala.
Big Brushy Coal & Coke Co., Harriman, Tenn.
Cutter, Curran & Bullitt, Philadelphia, Pa.
Davis Coal & Coke Co., Philadelphia, Pa.
Jewett, Bigelow & Bro., Detroit, Mich.
Main Jellico Mt. Coal Co., Kenosha, Ky.
Mobile Coal Co., Mobile, Ala.
Moore, Edgar M., & Co., Pittsburgh, Pa.
River, W. K., Coal Co., Baltimore, Md.

Coal-Handling Machinery.
Aulman Co., Canton, O.
Bartlett, C. O., & Snow Co., Cleveland, O.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Rawson & Morrison Mfg. Co., Cambridge, Boston, Mass.
Stuebner, G. L., Iron Works, Long Island City, N. Y.

Coal Tar Products.
Barrett Mfg. Co., Philadelphia, Pa.
Buchanan-Foster Co., Philadelphia, Pa.

Coke.
Alabama Coal & Iron Co., Birmingham, Ala.
Big Brushy Coal & Coke Co., Harriman, Tenn.
Davis Coal & Coke Co., Philadelphia, Pa.
Moore, Edgar M., & Co., Pittsburgh, Pa.

Compressed Air Compressors. (See Locomotive Builders.)

Concentrating Plants.
Crescent Co., Geo. V., New York, N. Y.

Concrete Engineers.
Frank & Hason, Baltimore, Md.
Gilbreth, Frank B., Boston, Mass.
Osborn Engineering Co., Cleveland, O.
Ransome & Smith Co., New York, N. Y.

Contractors' Supply & Equipment Co., Chicago, Ill.
Brazee Standard Machine Works, Chicago, Ill.
Ransome Concrete Mch. Co., New York, N. Y.

Concrete Steel Construction.
Frank & Hason, Baltimore, Md.
Ransome & Smith Co., New York, N. Y.
Upton, W. B. Co., Inc., Washington, D. C.

Condensers.
Alberger Condenser Co., New York, N. Y.
McClave, Hamilton & Co., New York, N. Y.
Pries, E. M., Machinery Co., Norfolk, Va.
St. well-Hierce & Smith-Valle Co., Dayton, O.

Contractors. (Paving, etc.)
Robinson Contracting Co., Geo. A., Mobile, Ala.

Contractors and Builders.
Gilbreth, Frank B., Boston, Mass.
Speir, W. E., Washington, D. C.

Contractors' Machinery and Supplies. (See Hoisting Machinery.)
Aulman Co., Canton, O.
Austin Mfg. Co., Chicago, Ill.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Flory, S., Mfg. Co., Bangor, Pa.
Hales Co., The, Cincinnati, O.
Larkin Steam Shovel Co., Warren, O.
Moyer, J. W., & Co., Philadelphia, Pa.
Municipal Engineering & Contracting Co., Chicago, Ill.
N. J. Foundry & Machine Co., New York, N. Y.
Peacock Iron Works, Selma, Ala.
Sanford-Day Iron Works, Knoxville, Tenn.

Conveying Machinery.
Aulman Co., Canton, O.
Bartlett, C. O., & Snow Co., Cleveland, O.
Caldwell, H. W., & Son Co., Chicago, Ill.
Flory, S., Mfg. Co., Bangor, Pa.
Harvard Co., New York, N. Y.
Jeffrey Mfg. Co., The, Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Engineering Co., Nicetown, Phila., Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
N. J. Foundry & Machine Co., New York, N. Y.
Rawson & Morrison Mfg. Co., Cambridge, Boston, Mass.
Robins Conveying Belt Co., New York, N. Y.

Cooling Towers.
Alberger Condenser Co., New York, N. Y.
Stocker, George J., St. Louis, Mo.

Copper.
Hertz, Theo. Metal Co., St. Louis, Mo.
Ryan, J. J., & Co., Chicago, Ill.

Copper. (Sheet, Rod and Bolting.)
Waterbury Brass Co., New York, N. Y.

Copper Smiths.
Badger, E. B., & Sons Co., Boston, Mass.
McMillan Bros. Co., Mobile, Ala.

Cordage.
American Mfg. Co., New York, N. Y.
Bailey, J. T., & Co., Philadelphia, Pa.
Columbian Cordage Co., Auburn, N. Y.

Cornices. (Metal.)
Chattanooga Roofing & Fdry. Co., Chattanooga, Tenn.
Wulff, W. C., & Co., Louisville, Ky.

Corn-Mill Machinery.
Allis-Chalmers Co., Chicago, Ill.
Brown, A. & F. Co., New York, N. Y.
Nurdyke & Marmon Co., Indianapolis, Ind.
Foss Mfg. Co., Springfield, O.
Munson Bros. Co., Utica, N. Y.
Sprout, Waldron & Co., Muncy, Pa.
Starr, E. P., & Co., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Corrugated Iron.
Scaife, W. B., & Sons Co., Pittsburgh, Pa.

Cotton Oil.
American Cotton Oil Co., New York, N. Y.
Cotton Oil & Fibre Co., Philadelphia, Pa.
Southern Cotton Oil Co., New York, N. Y.

Cotton Yarns. (Commission Merchants.)
Blythe, Richard A., Philadelphia, Pa.
Buckingham, Paulson & Co., Philadelphia, Pa.

Cotton-Gin Machinery.
Carver Cotton Gin Co., E. Bridgewater, Mass.
Gibbs, W. H., & Co., Columbia, S. C.
Tompkins, D. A., Co., Charlotte, N. C.
Talk & Murdoch Iron Works, Charleston, S. C.
Van Winkle Gin & Machine Works, E., Atlanta, Ga.

Cotton-Hill Machinery & Supplies.
American Supply Co., Providence, R. I.
Atherton Machine Co., A. T., Pawtucket, R. I.
Bigelow, W. H., Charlotte, N. C.
Cochran Iron Foundry & Machine Co., Cohoes, N. Y.
Cotton States Belting & Supply Co., Atlanta, Ga.
Draper Co., Hopkinton, Mass.

Fairmount Machine Co., Philadelphia, Pa.
Kilburn, Lincoln & Co., Fall River, Mass.
Lowell Machine Shop, Boston, Mass.
Mason Machine Works, Taunton, Mass.
Robbins, O. A., Charlotte, N. C.
Ruth Automatic Knitting Machine Co., York, Pa.
Sherwood Bobbin & Mfg. Co., Greensboro, N. C.
Tompkins, D. A., Co., Charlotte, N. C.
Washburn, A. H., Charlotte, N. C.
Whitmanville Spin. Ring Co., Whitmanville, Mass.

Cottonseed-Oil Machinery.
American, Chicago, Ill.
Buckeye Iron & Brass Works, Dayton, Ohio.
Bushnell Press Co., G. H., Thompsonville, Conn.
Cardwell Machine Co., Richmond, Va.
Carver Cotton Gin Co., E. Bridgewater, Mass.
Foss Mfg. Co., Springfield, O.
Sprout, Waldron & Co., Muncy, Pa.
Stilwell-Hierce & Smith-Valle Co., Dayton, Ohio.
Tompkins, D. A., Co., Charlotte, N. C.
Van Winkle Gin & Machine Works, E., Atlanta, Ga.

Cotton Seed Mch. (Hullers, Separators, etc.)
Carver Cotton Gin Co., East Bridgewater, Mass.

Cottonseed Products.
American Cotton Oil Co., New York, N. Y.
Cotton Oil & Fibre Co., Philadelphia, Pa.
Southern Cotton Oil Co., New York, N. Y.

Covering. (Pipe and Boiler.)
Carey, Philip, Mfg. Co., Lockland, O.
Southern Pipe Covering Co., Richmond, Va.

Coverers. (Boilers and Cleaners.)
American Supply Co., Providence, R. I.

Cranes. (Traveling, Hand, Power, Hydraulic.)
Case Manufacturing Co., The, Columbus, O.
Hayward Co., New York, N. Y.
Lane Mfg. Co., Montpelier, Vt.
Moyer, J. W., & Co., Philadelphia, Pa.
Niles-Bement-Fond Co., New York, N. Y.
Pawling & Harnischfeger, Milwaukee, Wis.

Crankshafts.
Chester Steel Castings Co., Philadelphia, Pa.

Crays.
Lowell Crays Co., Lowell, Mass.

Crosscutting Works.
International Crosscutting & Cons. Co., Galveston, Tex.
West Pascagoula Crosscut Wks. W. Pascagoula, Miss.

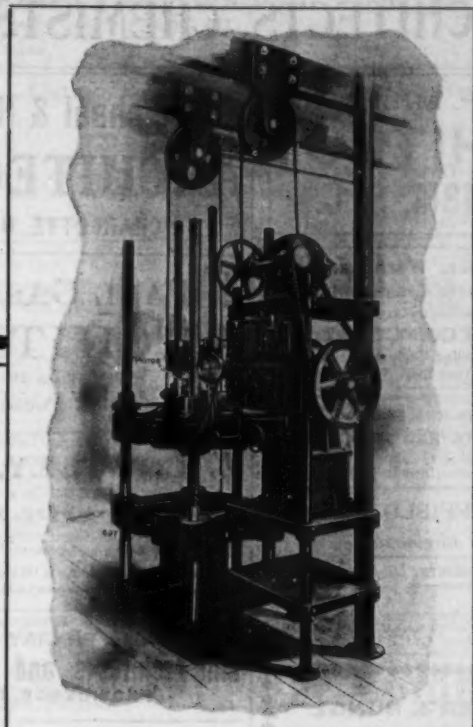
Cross Arm Saws and Banders.
Chattanooga Machinery Co., Chattanooga, Tenn.

Cross Arms and Flims.
Alleghany Pio & Bracket Co., Covington, Va.
Houston & Lissett, Louisville, Tenn.

International Crosscutting & Cons. Co., Galveston, Tex.

Cross Tiles.
International Crosscutting & Cons. Co., Galveston, Tex.
Wilkins, Van S., Lumber Co., Mobile, Ala.

Crowning and Pulverizing Mch.
Austin Mfg. Co., Chicago, Ill.
Bartlett, C. O., & Snow Co., Cleveland, O.
Bradley Pulverizer Co., Boston, Mass.
Crescent Co., Geo. V., New York, N. Y.
Kent Mill Co., New York, N. Y.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Simmons, J. S., & G. F., Brooklyn, N. Y.
Smith, F. L., & Co., New York, N. Y.

Electro-
Hydraulic
Press.
—
Northern
Motors.

The Quest for Profits

Leads logically to NORTHERN MOTOR DRIVE. It affords facilities for economical, safe, convenient, flexible operation foreign to ordinary power transmissions. Get Leaflet No. 6101.

Northern Drive Insures Profits

Northern Electrical Mfg. Co., Madison, Wis., U.S.A.

Engineers—Manufacturers.

ESTABLISHED 1874.

To make bright, smooth, clean castings, use

702 Pure Ceylon Plumbago

Ask your neighbor about it.

The S. Obermayer Co.

CINCINNATI.

CHICAGO.

PITTSBURG.

Manufacturers

"Everything you need in your Foundry."



It

is a safety valve that can be relied upon, as it

Always

opens at pressure set, closes when pressure falls below that point and

Works

instantly and automatically; top can be taken off while it is attached to boiler without disconnecting outlet pipe.

Crosby-Meady Pop Safety Valve.

We have a booklet written for YOU. Get it now.

CROSBY STEAM GAGE & VALVE CO.

OFFICE AND WORKS, BOSTON, MASS.

22-27 Oliver St., Boston, Mass.
21-23 Lake St., Chicago, Ill.75 John St., New York.
147 Queen Victoria St., London, Eng.

ARCHITECTS, CHEMISTS, CONTRACTORS, ENGINEERS, Etc.

FRANK P. MILBURN,
ARCHITECT
COLUMBIA, S. C.

Mills, Factories, Warehouses of
Steel-Concrete Construction.
Plans prepared and estimates furnished by
W. B. UPTON CO., (Inc.)
Constructing Engineers,
Washington Loan & Trust Bldg., Washington, D. C.

W. B. SMITH WHALEY & CO.
Mill Engineers and Architects.
Offices—1325 Main Street, Columbia, S. C.
and 1012 Tremont Building, Boston, Mass

O. H. SHEFFIELD & CO.,
Civil Engineers
and Architects,
518 Austell Bldg., ATLANTA, GA.
Railways, Water Powers, Municipal, Public
Works, Bridges and Buildings.

WHEELER & RUNGE
ARCHITECTS,
Charlotte, N. C.

FRED GORDON SHAW,
ARCHITECT
AUGUSTA and COLUMBUS, GA. Special Attention to Heavy Constructions.

Surveys,
Estimates,
Specifications,
Consultation,
Reports,
Superintendence,
Inspection,
Testing.

Myers, Finney & Morrison,
Associated Engineers.

CIVIL, ELECTRICAL, MECHANICAL.
E. T. D. Myers, Jr., John H. Finney, Hugh S. Morrison.
Mem. Am. Soc. C. E. As. Mb. A. I. E. E. Jun. Mb. A. S. M. E.
WASHINGTON, D. C. and RICHMOND, VA.
Bond Bldg. 1107 1/2 E. Main St.

Electric Rwy., Power
and Lighting Plants,
Industrial Plants,
Factory Economics,
Modernizing,
Arbitration,
BLUE PRINTS,
all kinds.

Engineering Company of America.
(INCORPORATED.)

74 Broadway, New York.

ENGINEERS

In Civil, Mechanical, Electrical, Hydraulic, Forestry, Metallurgical and Mining Departments.
Plans, Specifications and Supervision of installations of plants of all kinds.

Examination, Reports and Recommendations on existing properties, with a view to reducing cost of maintenance and production.
Reports giving the technical and commercial possibilities of Enterprises, Power Plants, Mines, Smelters, Railways.

Branch Offices:

159 La Salle St., CHICAGO, ILL.

CHARLOTTE, N. C.

DENVER, COL.

MEMBER
AMERICAN SOCIETY MECHANICAL ENGINEERS.

MEMBER
AMERICAN INSTITUTE ELECTRICAL ENGINEERS.

JAMES B. SCOTT,
CONSULTING ENGINEER.

607-9 WEST END TRUST BLDG. 808-9 MARYLAND TRUST BLDG. 1109 COMMERCIAL CABLE BLDG.
PHILADELPHIA. BALTIMORE. NEW YORK.

REPORTS—Examinations and expert advice on the earning capacity, construction, operation and reorganization of public service properties.

SURVEYS—Projected railways and general practice.

PLANS AND SPECIFICATIONS—Complete electric railways, electric lighting systems, steam and hydraulic power plants, etc.

SUPERINTENDENCE—During construction. Supervision of operating departments.

STEEL FRAME MILL BUILDINGS,
STEEL and IRON TANKS and VATS
OF EVERY DESCRIPTION



Scaife's Germ-Proof Water Filters,
10 to 10,000 gallons capacity per hour.

WM. B. SCAIFE & SONS CO.

(Founded 1862.)

PITTSBURG, PA.

McMichael & Hunter,
ARCHITECTS,
CHARLOTTE, N. C.

PAUL GASSER,
ARCHITECT.

Office Jackson Block,
TAMPA, FLORIDA.

E. C. WILEY, M. E.
M. AM. SOC. M. E.
Lynchburg, Va.

Plans prepared for the installation of lighting,
heating and power plants.
Machine Design and Working Draw-
ings a Specialty.

C. A. M. PRARAY & CO.
Mill Architects and Engineers,
PROVIDENCE, R. I.

BARR & ELAM, Electrical Contractors.
Electric and Gas Supplies, Electric Bells, Burglar
Alarms, &c.
GREENSBORO, NORTH CAROLINA.

C. R. MAKEPEACE & CO.
Architects and Mill Engineers.
PROVIDENCE, R. I. Plans, Specifications and Esti-
mates furnished for Cotton & Woolen Mills.

P. A. MCCARTHY, C. E.
Civil and Consulting Engineer.

Late Ch. Eng., Eastern Texas R. R. M., Am. Ry.
Eng. & M. of Way Ass'n.
Examinations and Reports; Power Plants, Bridges
and Structures, Municipal Improvements, Water Sup-
ply, Sewerage and Irrigation, Electric Light Plants,
Steam and Electric Railway Location and Construc-
tion.
Telephone 174. DECATUR, TEXAS.

JOHN W. HAYS,
M. AM. SOC. C. E.

Civil Engineer,

WATER POWERS, WATER SUPPLY, SEWERAGE.
No. 3 S. Adams St., Petersburg, Va.

W. H. HARVEY,
Engineer and Contractor.

Plans and Specifications for Complete Plants.
Electric, Hydraulic and Steam Installations.
Results Guaranteed.

Suite 380 Randolph Bldg., MEMPHIS, TENN.

COLLIER & BROWN,
Electrical & Mechanical Engineers.

Engineering, Designing and Supervising of
Steam, Electric and Hydraulic Plants.
Cotton Mill Construction a Specialty.

917-18-19 Empire Bldg., ATLANTA, GA.

THE HUTTON ENGINEERING CO.
LEXINGTON, VA.

Consulting and Contracting
Electrical and Mechanical Engineers.

Central Stations Electric Railways, Steam and
Power Plants.

Established 1891. Cable Address, "Catlett."

CHARLES CATLETT,
Chemist and Geologist.

Formerly of the U. S. Geol. Survey Lab.
Examination and Report on Developed and Un-
developed Properties.

Stanton, Va.

Long Distance Telephone Connection.

N. P. PRATT LABORATORY,
Fitten Building, ATLANTA, GA.
Assays and analyses of all natural and artificial
products. Chemical and mining engineering.

FROEHLING & ROBERTSON,

Successors to Dr. HENRY FROEHLING,
Analytical and Consulting Chemists.
Chemical and Mining Engineers.

17 South 12th St., RICHMOND, VA.

Analyses and assays of ores of every kind, and
of all artificial products. Water analysis, mineral,
sanitary and manufacturing, a specialty. Esti-
mates promptly furnished. Geological and chemi-
cal investigation of mineral properties of the South.

John E. Ramsay & Co
ARCHITECTS.

Bell Block. SALISBURY, N. C.

Jos. McWilliams & Co.
Engineers and
Contractors.

Louisville, Ky.

Complete Installations for Factories,
Institutions, Hotels and Large
Buildings.

Steam Power Plants, Electric Street
Railway, Power, Lighting and Factory
Transmission Plants, Heating and
Ventilating Apparatus, Ice-Making and
Refrigerating Plants, Machinery and
Supplies.

CHAS. W. CARLTON
and CO.,

621 Austell Building,
ATLANTA, GA.

ARCHITECTS

All our employees operate under the same "Field System," and we
can instantly concentrate an organized force on work where the time
for completion is limited.

FRANK B. GILBRETH,

General Contractor.

BOSTON.

NEW YORK.

LONDON.

STRUCTURAL STEEL
FURNISHED
and
ERECTED
Anywhere in the World
Only American firm having steel fabricated in Europe.
Can make quick deliveries and quote very interesting prices.
GENERAL SUPPLY and CONSTRUCTION COMPANY,
Engineers and Contractors. 8-10 Bridge St., NEW YORK.

VIRGINIA BRIDGE & IRON CO.

Office and Works: ROANOKE, VA.

Manufacturers
Bridges, Buildings,
Turntables and
Structural Steel.

Classified Index of Articles Advertised

For ALPHABETICAL INDEX See Page 32

Sturtevant Mill Co., Boston, Mass.
Walker & Elliott, Wilmington, Del.
Crushers. (Cora and Cobb.)
Brown Co., A. F., New York, N. Y.
Foss Mfg. Co., The Springside, N. Y.
Munson Bros. Co., Utica, N. Y.
Wolf Co., The Chambersburg, Pa.
Crusher Mills.
Laird Steel Co., Philadelphia, Pa.
Capola Furnaces.
Obernayer, S. Co., Cincinnati, O.
Petroleum Iron Works Co., Washington, Pa.
Cutlerheads. (Woodworking.)
Moshannon Mfg. Co., Philadelphia, Pa.
Shimer, Samuel J., & Sons, Millers, Pa.
Smith, H. B., Machine Co., Smithville, N. J.
Dado Heads.
Huther Bros., Rochester, N. Y.
Designers and Illustrators.
Alpha Photo-Engraving Co., Baltimore, Md.
Baltimore-Maryland Engraving Co., Baltimore, Md.
Desks.
Cushing Co., The, Baltimore, Md.
Dearborn Desk Co., Birmingham, Ala.
Himmel, M. L., & Son, Baltimore, Md.
Dies for Sheet-Metal Workers.
Lester, Chas., & Co., Brooklyn, N. Y.
Niagara Machine & Tool Works, Buffalo, N. Y.
Dipper Heads, Etc.
Taylor Iron & Steel Co., High Bridge, N. J.
Doors. (Steel Rolling.)
Kinross Mfg. Co., Columbus, O.
Dredges and Excavators.
Hardie-Tynes Mfg. Co., Birmingham, Ala.
Hayward Co., New York, N. Y.
Miles Co., Cincinnati, O.
Marion Steam Shovel Co., Marion, O.
The Automatic Shovel Co., Lorain, O.
Drills. (Pneumatic.) (See Drills, Rock & Mining.)
Drills. (Prospecting.)
Sullivan Machinery Co., Chicago, Ill.
Drills. (Rock and Mining.)
Ingersoll-Sergeant Drill Co., New York, N. Y.
McKleran Drill Co., New York, N. Y.
Rand Drill Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.
Drills. (Twist.)
Barnes Co., W. F. & John, Rockford, Ill.
Kane Twist Drill & Machine Co., New Bedford, Mass.
Drill Presses.
Bailey-Lebby Co., Charleston, S. C.
Barnes Co., W. F. & John, Rockford, Ill.
Barr, H. G., Worcester, Mass.
Bickford Drill & Tool Co., The, Cincinnati, O.
Price, S. M., Machinery Co., Norfolk, Va.
Walke, Henry, Co., Norfolk, Va.
Dry-Docks.
Baltimore Shipbuilding & Dry Dock Co., Balto., Md.
Newport News Shipbuilding & D. D. Co., Newport News, Va.
Drying Machinery.
American Blower Co., Detroit, Mich.
Andrews & Johnson Co., Chicago, Ill.
Bailey-Lebby Co., The, Charleston, S. C.
Bartlett, C. O., & Snow Co., Cleveland, O.
Jeffrey Mfg. Co., The, Columbus, O.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Boston, Mass.
Dry-Kilns.
American Blower Co., Detroit, Mich.
Sturtevant Co., B. F., Boston, Mass.
Union Iron Works Co., Selma, Ala.
Dumbwaiters.
Spidel, J. G., Reading, Pa.
Dust-Collecting System.
Allington & Curtis Mfg. Co., Saginaw, W. R. Mich.
Cincinnati Exhaust & Blow Pipe Co., Cincinnati, O.
Dixie Mfg. Co., Baltimore, Md.
Dyeing Machinery.
Fairmount Machine Co., Philadelphia, Pa.
Dynamometers and Motors.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Commercial Electric Co., Indianapolis, Ind.
Crocker-Wheeler Co., Amper, N. J.
Ewing-Merkle Electric Co., St. Louis, Mo.
Florida Electric Co., Jacksonville, Fla.
General Electric Co., Schenectady, N. Y.
Guarantee Electric Co., Chicago, Ill.
Jennison, Chas. F., Buffalo, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Northern Electrical Mfg. Co., Madison, Wis.
Piedmont Electric Co., Asheville, N. C.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Standard Electric Co., Norfolk, Va.
Triumph Electric Co., Cincinnati, O.
Westco Supply Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
Educational Institutions.
University School for Boys, Baltimore, Md.
Electors.
Ohio Injector Co., Wadsworth, O.
Electric Contractors.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Barr & Elam, Greensboro, N. C.
Electrical Material Co., Baltimore, Md.
Electric Supply Co., Savannah, Ga.
Ewing-Merkle Electric Co., St. Louis, Mo.
Harvey, W. H., Memphis, Tenn.
MacAfee, John Blair, Philadelphia, Pa.
McWilliams, Jos., & Co., Louisville, Ky.
Northern Elec. Mfg. Co., Madison, Wis.
Scott, James B., Baltimore, Md.
Standard Electric Co., Norfolk, Va.
Tompkins, D. A., Co., Charlotte, N. C.
Upton, W. B., Co., Washington, D. C.
Westco Supply Co., St. Louis, Mo.
Electrical Instruments.
Electrical Material Co., Baltimore, Md.
Ewing-Merkle Electric Co., St. Louis, Mo.
Northern Electric Mfg. Co., Madison, Wis.
Piedmont Electric Co., Asheville, N. C.
Standard Electric Co., Norfolk, Va.
Westco Supply Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
Electric Motor.
Weaver, W. T., Power Co., Asheville, N. C.
Electric Railway Equipment.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Electrical Material Co., Baltimore, Md.
Ewing-Merkle Electric Co., St. Louis, Mo.
General Electric Co., Schenectady, N. Y.
Northern Electrical Mfg. Co., Madison, Wis.
Standard Electric Co., Norfolk, Va.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
Westco Supply Co., St. Louis, Mo.
Electric Repairs.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Electric Supply Co., Savannah, Ga.

Ewing-Merkle Electric Co., St. Louis, Mo.
Guarantee Electric Co., Savannah, Ga.
Kentucky Electrical Co., Owensboro, Ky.
Standard Electric Co., Norfolk, Va.
Westco Supply Co., St. Louis, Mo.
Electrical Supplies.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Barr & Elam, Greensboro, N. C.
Electrical Material Co., Baltimore, Md.
Electric Supply Co., Savannah, Ga.
Ewing-Merkle Electric Co., St. Louis, Mo.
Florida Electric Co., Jacksonville, Fla.
General Electric Co., Schenectady, N. Y.
Guarantee Electric Co., Chicago, Ill.
Kentucky Electrical Co., Owensboro, Ky.
Northern Electrical Mfg. Co., Madison, Wis.
Piedmont Electric Co., Asheville, N. C.
Standard Electric Co., Norfolk, Va.
Sturtevant Co., B. F., Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Westco Supply Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
Electric Locomotives. (See Locomotive Bldrs.)
Electric Trucks.
Baldwin Locomotive Works, Philadelphia, Pa.
Electrotypers.
American Type Foundry Co., Baltimore, Md.
Spencer & Hall, Baltimore, Md.
Elevators.
American Machine Co., Louisville, Ky.
Bartlett, C. O., & Snow Co., Cleveland, O.
Bates' James Sons, Baltimore, Md.
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.
Fairmount Machine Co., Philadelphia, Pa.
Faunt Le Roy & Co., Baltimore, Md.
Florida Electric Co., Jacksonville, Fla.
Haven Elevator Co., Cincinnati, O.
Kinkadee & Liggett, Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Louisville Elevator Co., Louisville, Ky.
Maryland Foundry and Machine Co., Baltimore, Md.
Morse, Williams & Co., Philadelphia, Pa.
Otis Elevator Co., New York, N. Y.
Parkhurst Bros. & Co., Indianapolis, Ind.
Park Mfg. Co., Charlotte, N. C.
Plunger Elevator Co., Worcester, Mass.
Reedy, J. W., Elevator Mfg. Co., Chicago, Ill.
Spidel, J. G., Reading, Pa.
Westbrooks, J. B., Fry & Mch. Co., Danville, Va.
Elevator Buckets.
Caldwell, H. W., & Son, Chicago, Ill.
Greenwald Co., I. & E., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Taylor Iron & Steel Co., High Bridge, N. J.
Elevator Enclosures and Cabs.
Boiles, J. E., Iron & Wire Works, Detroit, Mich.
Buffalo Wire Works Co., Buffalo, N. Y.
Dufur & Co., Baltimore, Md.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Meyers Mfg. Co., The, Fred J. Hamilton Co.
Elevator Skops. (See Wire Rope.)
Emery.
Carborundum Co., The, Niagara Falls, N. Y.
Emery Wheels. (See Grinding and Polishing Machinery.)
Employment Bureaus.
Engineering Agency, Chicago, Ill.
Haggoods, New York, N. Y.
Engineers. (Electric, Civil, Consulting, Contracting, Mechanical and Mining, etc.)
Alber & Byrne, Birmingham, Ala.
Brennan, P. C., New York, N. Y.
Collier & Brown, Atlanta, Ga.
Consolidated Air Lift Co., Washington, D. C.
Crocker-Wheeler Co., Amper, N. J.
Dyer, D. H., & Sons, Fall River, Mass.
Engineering Co. of America, New York, N. Y.
Florida Electric Co., Jacksonville, Fla.
Frink & Hazen, Baltimore, Md.
Force, John F., Columbus, Ohio.
Gibbs, Frank B., Boston, Mass.
Harvey, W. H., Memphis, Tenn.
Hays, John W., Petersburg, Va.
Hutton Engineering Co., Lexington, Va.
Kennedy, Walter, Pittsburg, Pa.
Ludwig & Co., Atlanta, Ga.
MacAfee, John Blair, Philadelphia, Pa.
McCarthy, P. A., Decatur, Tex.
McWilliams, Jos., & Co., Louisville, Ky.
Municipal Engineering & Contracting Co., Chicago, Ill.
Myers, Finney & Morrison, Richmond, Va.
Northern Elec. Mfg. Co., Madison, Wis.
Osborn Engineering Co., Cleveland, O.
Passaic Steel Co., Paterson, N. J.
Pearson, R. F., Paterson, N. J.
Pratt Laboratory, N. Y., Atlanta, Ga.
Railways & Light Co. of America, Balto., Md.
Radon-Alcott Turbine Co., Mount Holly, N. J.
Robinson Contracting Co., Geo. A., Mobile, Ala.
Sarle, O. Perry, Providence, R. I.
Scott, Jas. B., Baltimore, Md.
Sheffield, O. H., & Co., Atlanta, Ga.
Smith & Co., F. L., New York, N. Y.
Standard Electric Co., Norfolk, Va.
Tompkins, D. A., Co., Charlotte, N. C.
Upton, W. B., Co., Washington, D. C.
Virginia Bridge & Iron Co., Roanoke, Va.
Wiley, E. C., Lynchburg, Va.
Westinghouse, Church, Kerr & Co., Pittsburgh, Pa.
Engines.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Ailsa-Chalmers Co., Chicago, Ill.
American Engine Co., Round Brook, N. J.
Atlas Engine Works, Indianapolis, Ind.
Ball Engine Co., The, Erie, Pa.
Ball & Wood Co., New York, N. Y.
Baltimore Engine Co., Baltimore, Md.
Bates Machine Co., Joliet, Ill.
Brown Corlies Eng. Co., Corlies, Wis.
Brownell & Co., The, Dayton, O.
Cameron & Barkley Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Copper, C. & G., Co., Mt. Vernon, O.
Erie Pump & Engine Co., Erie, Pa.
Farquhar Co., A. B., Ltd., York, Pa.
Fishkill Landing Machine Co., Fishkill, N. Y.
Flory, S. Mfg. Co., Bangor, Pa.
Frick Co., Waynesboro, Pa.
Gibbs, W. H., & Co., Columbia, S. C.
Greenwald Co., I. & E., Cincinnati, O.
Hardie-Tynes Mfg. Co., Birmingham, Ala.
Harrisburg Dry & Machine Wks., Harrisburg, Pa.
Hartfelder-Garbutt Co., Savannah, Ga.
Hill, Wm. E., & Co., Kalamazoo, Mich.
Hoover, Owens & Rentscher Co., Hamilton, O.
Houston, Stanwood & Gamble Co., Cincinnati, O.
Lefel, James, & Co., Springfield, O.
Lidgerwood Mfg. Co., New York, N. Y.
Lombard Iron Works & Supply Co., Augusta, Ga.
Price, S. M., Machinery Co., Norfolk, Va.
McClave, Hamilton & Co., New York, N. Y.
Murray Iron Works Co., Burlington, Iowa.
Neckelburg Iron Works Co., St. Louis, Mo.
Pennsylvania Iron Works, Philadelphia, Pa.
Phoenix Iron Works Co., Mendocino, Pa.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Robbins, O. A., Charlotte, N. C.
Savannah Locomotive & Works, Savannah, Ga.
Schofield, J. S., Sons Co., Macon, Ga.
Shepherd Engineering Co., Franklin, Pa.
Smith-Courtney Co., Richmond, Va.
Southern Eng. & Boiler Works, Jackson, Tenn.
Southwest Foundry & Machine Co., Philadelphia, Pa.
St. Louis Iron & Machine Works, St. Louis, Mo.
Strait, H. N., Mfg. Co., Kansas City, Kan.
Sturtevant Co., B. F., Boston, Mass.
Tod, Wm., Co., Youngstown, O.
Tompkins, D. A., Co., Charlotte, N. C.
Union Iron Works Co., Selma, Ala.
Valk & Murdoch Iron Works, Charleston, S. C.

FUEL BURNING APPLIANCES.

ROCKWELL ENGINEERING CO.,
26 Cortlandt Street, New York.OIL FURNACES
FOR EVERY
PURPOSE.Concrete Steel Construction,
Ransome System.FRINK & HAZEN,
CONSULTING AND CONTRACTING ENGINEERS,
711 Union Trust Building, Baltimore, Md.
Buildings—STEEL—Bridges.

GEO. W. KNOX, M. A. I. E. E.

JAS. Z. GEORGE, A. M. A. I. E. E.; J. M. A. S. M. E.

KNOX, GEORGE & CO.

Consulting Engineers.

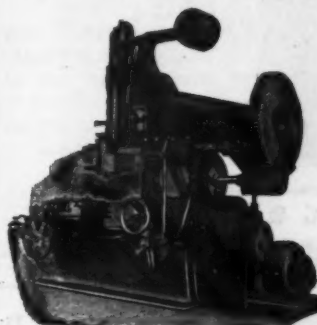
Design Build and Operate Electric Railway,
Lighting and Power Transmission Systems;
Gas Plants, Pumping Plants for Water Supply,
Drainage and Irrigating Systems, etc.OFFICES -
Fisher Building, CHICAGO.
Tulane-Newcomb Building, NEW ORLEANS

THE OSBORN ENGINEERING CO.

Osborn Bldg. Cleveland, O.

Consulting, Civil, Mechanical,
Electrical and Mining Engineers.BRIDGES—Steel, Concrete, Concrete-Steel, Stone—for Highways, Electric Railways, Railroads.
MANUFACTURING PLANTS—of All Kinds, Machine Shops, Foundries, Factories, Power
Plants, Warehouses.
CEMENT PLANTS—Expert Examination of Property, Analyses and Tests of Materials, Sample
Burnings, Plans, Specifications and Superintendence, New Plants ready for operation.
BITUMINOUS COAL PROPERTIES—Prospecting, Surveys, Reports, Plans, Specifications,
New Plants.
INSPECTION. Structural Steel at Mills and Shops. CEMENT TESTING.

Crocker-Wheeler Company.



Motors

for the drive of Machines and
Tools.

Generators

for Lighting and Power Plants.

Write for our Bulletins.

Office and Works:

AMPERE, N. J.

CHATTANOOGA ROOFING & FOUNDRY CO.

Formerly CHATTANOOGA STEEL ROOFING CO.

Manufacturers of all kinds of

ROOFING AND CASTINGS,

Store Fronts, Columns, Lintels, Sills,

GALVANIZED IRON WORK,

Awnings, Skylights and Cornice.

PATENT METAL SHINGLES, Tin and Galvanized.

All Styles Steel and Tin Roofing,

Drip Pans, Stove Pipe, Elbows, etc.

CHATTANOOGA, TENNESSEE.

LUDWIG & CO.

Consulting Engineers.

Specialty:

POWER PLANTS,

Steam, Electric, Hydraulic.

Condensers and
Cooling Towers.212 Empire Bldg.
ATLANTA, GA.

O. PERRY SARLE,

Civil Engineer,

146 Westminster St., Providence, R. I.

Development of Water Powers. Designs for
Power Stations, Masonry Dams. Valuation of
Water Powers. Water Supply. Sewerage.

JOHN P. FORCE,

Sanitary and Hydraulic Engineer.

Water Works, Sewerage and Sewage
Disposal. Surveys, Estimates, Plans,
Specifications and Reports. Construc-
tion Superintended.

41-42 Dispatch-Butler Block, COLUMBUS, O.

JOHN BLAIR MacAFEE

The building and equipment of steam and electric
railways, power plants and lighting systems.
Preliminary engineering with estimates.
Reports on properties in operation.

Harrison Bldg., PHILADELPHIA.

WALTER KENNEDY,

Contracting and
Consulting
Engineer,

Bijou Bldg., 611 Penn Ave., Pittsburg, Pa.

Long Distance Phone, 3174.

P. C. BRENNAN,

Consulting and Mining Engineer.

Asphalt reported on from the Deposit to the Street.
Power Measured and Valves Adjusted. Oil Drilling
Apparatus. General Designing and Complete Plans
Contracted for and Capacity Guaranteed.
Hydraulic Engineer.MINING & DEVELOPMENT CO.
N. Y. Office, 41 Wall St.

194 Nott Ave., Long Island City, N. Y.

ALBER & BYRNE, Members Eng.
Assn. South.Civil, Mechanical and Consulting Engineers.
Make surveys, Plans and specifications for rail-
roads and bridges, water powers and cotton mills,
city water works, electric light plants and sewer-
age, subdivisions of property, surveys and reports
on mineral lands.
Map of Birmingham and vicinity for sale.
1909% 1st Ave., Birmingham, Ala.

Old Dominion Portland Cement.

W. L. G. HARTRANFT CEMENT CO.

MANUFACTURED BY
VIRGINIA PORTLAND CEMENT CO.
CRAIGSVILLE, VA.

SOLE SELLING AGENT.

Real Estate Trust Building,
PHILADELPHIA, PA.



Carolina Portland Cement Co.

CHARLESTON, S. C. BIRMINGHAM, ALA.

Sole Selling Agents for North and South Carolina, Florida and Georgia. Lime, Rosendale Cement, Louisville Cement, Etc.
Full stocks of Portland Cement, Rosendale Cement and Plaster at Norfolk, Wilmington, Charleston and Savannah.

Maryland Lime & Cement Co.

217-219 Bowly's Whl. BALTIMORE, MD.

DISTRIBUTORS:—Lehigh Portland Cement—Rosendale Cement—Savage, Union, Somerset Fire Brick—Lime—Vitrified Salt-Glazed Sewer Pipe—Cal. Plaster—Limoid—Roofing Felts—Flue Linings—Chimney Tops, etc.

CONTRACTORS



For the installation of
WATER WORKS or
SEWER SYSTEMS,

ALSO
GAS AND OIL PIPE LINES.

Will cooperate with
RESPONSIBLE CONTRACTORS
in any part of
the country wishing to
use our machinery on
profit-sharing basis.

Machines Leased to Responsible Contractors.

MUNICIPAL ENGINEERING & CONTRACTING CO.

Offices, 1311 Manhattan Building, Chicago, Ill.

LEHIGH Portland Cement



High Tensile Strength, Finely Ground,
Light and Uniform in Color.

Southern and Western Distributors:

**THE KELLEY ISLAND LIME
& TRANSPORT CO.**

CLEVELAND, OHIO.

CUMBERLAND HYDRAULIC CEMENT

Equal to many

PORTLAND BRANDS.

The "Ne plus ultra" of Natural Hydraulic Cements.

Quadruple
Grinding.



Initial Crushers,
Ball and
Tube Mills.

Recommended by Engineers, Specified
by Architects, Accepted Standard for
**EXCELLENCE,
DURABILITY,
STRENGTH.**

The Cumberland Hyd. Cement & Mfg. Co.

P. O. Box 264.

CUMBERLAND, MD.



ROYAL, MUNICIPAL, AMERICAN PORTLANDS.

Warner's Hydraulic, Warner's Improved Hydraulic, Lime, "Limoid" Plaster, Sewer Pipe, etc.

CHARLES WARNER COMPANY,
New York, Wilmington, Philadelphia.

THE FINEST CEMENTS



Lehigh
Brand

Dexter
Brand

SOUTHEASTERN
LIME & CEMENT
CO.

Charleston, S. C.

Southern Distributors



For Southern Work



The
CHEAPEST
and most
RELIABLE

**Hydraulic
CEMENT**

50 years record,
500 bbls. daily.

RIDGEMONT CEMENT MFG. CO.
Ironville, Va.

CEMENTS

William M. Bird & Co.,
CHARLESTON, S. C.

Manufacturers' Agents for

American, Rosendale and Portland
Cements and Importers of Best
Brands of Foreign.

Full Stocks of

Oils, Paints and Builders' Supplies.

RUGGLES-COLES

DRYERS

FOR

Phosphates, Slag, Coal,
Marl, Clay, Etc.

**RUGGLES-COLES
ENGINEERING CO.**

CHICAGO.

NEW YORK.

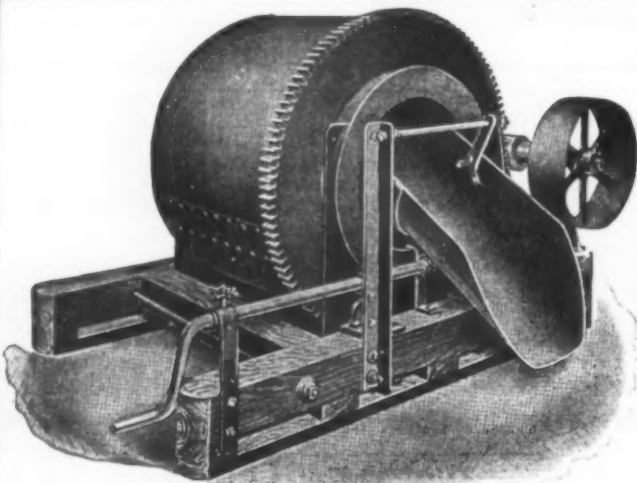
V. H. KRIEGSHABER,

Manufacturer and dealer in

BUILDING SUPPLIES,

Lime, cement, fire brick, pressed brick, sewer pipe,
marble tile, wrought and cast iron work, terra cotta.

Office, No. 6 Austell Bldg., Atlanta, Ga.
Carload and mixed car shipments a specialty.



Ransome Concrete Mixers

designed by specialists for their
own use, combine with the highest
efficiency an economy greater
than is attained by any other
machine.

Ransome Concrete Machinery Co.

Concrete Machinery and Appliances,
Twisted Steel, Etc.

11 Broadway, New York.

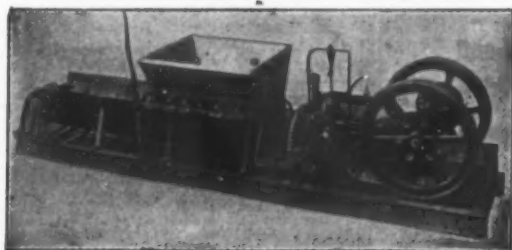
OUR AGENTS CARRY STOCK

H. CHANNON CO., Chicago.

NORMAN B. LIVERMORE CO., San Francisco.

JAMES COOPER, Montreal, Can.

GEORGE COOPER, Pittsburg, Pa.



This is only one of 30 or more styles of machines that we make for
different kinds of concrete work. 10 patents
allowed, others pending.

The Greatest Concrete Mixer Yet Made.

Also Mortar and
Asphalt Mixers.

Write for our new Catalogue M.

DRAKE STANDARD MACHINE WORKS,

Factory,
7-9-11-13 Garden Street,
Chicago.

Office and Salesroom,
228-300-302 W. Jackson Boul.,
CHICAGO, ILL., U. S. A.

IMPORTERS

PORTLAND CEMENT.

C. M. GILBERT & CO., SAVANNAH, GA.

MARYLAND CEMENT CO.

MANUFACTURERS OF

Highest Grade Portland Cement.

OFFICE:
Builders' Exchange, Baltimore, Md.

WORKS:
Sparrows Point, Maryland.

RANSOME'S

Concrete Steel Construction

For FACTORIES, WAREHOUSES, ETC. Detailed information
promptly furnished.

RANSOME & SMITH CO.,

11 Broadway New York.

CONSULTING CONCRETE ENGINEERS.

Classified Index of Articles Advertised

For ALPHABETICAL INDEX See Page 32.

Valley Iron Works, Williamsport, Pa.
Viller Mfg. Co., Milwaukee, Wis.
Vogt, Henry, Machine Co., Louisville, Ky.
Waite, Henry, Co., Norfolk, Va.
Westinghouse, Church, Kerr & Co., Pittsburgh, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Engines. (Gas, Gasoline and Kerosene.)
Blakely Mfg. Co., The Birmingham, Ala.
Brown-Cochran Co., Lorain, O.
Capital Gas Engine Co., Indianapolis, Ind.
Columbus Machine Co., Columbus, O.
Gibbs, W. H., & Co., Columbia, S. C.
Otto Gas Engine Works, Philadelphia, Pa.
Pennsylvania Iron Works, Philadelphia, Pa.
Price, S. M., Machinery Co., Norfolk, Va.
Westinghouse, Church, Kerr & Co., Pittsburgh, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Engines. (Hydraulic Pumping.)
Niagara Hydraulic Engine Co., Chester, Pa.

Engravers.
Alpha Photo Engraving Co., Baltimore, Md.
Baltimore-Maryland Engraving Co., Baltimore, Md.
Middleton, J. W., & Co., Chicago, Ill.

Excelsior Machines.
American Excelsior and York, Baltimore, Md.
Gibbs, W. H., & Co., Columbia, S. C.

Exhaust Heads.
Burt Mfg. Co., Akron, O.

Expansion Belts.
N. J. Foundry & Machine Co., New York, N. Y.

Fans. (Electric.)
Electrical Material Co., Baltimore, Md.
General Electric Co., Schenectady, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Fans. (Ventilating.) (See Blowers, Exhaust Fans.)

Feed-Water Heaters and Purifiers.
Bates Machine Co., Joliet, Ill.

Gibbs, W. H., & Co., Columbia, S. C.

Green Fuel Economizer Co., Matamoras, N. Y.

Greenwald Co., I. & E., Cincinnati, O.

Keller, Benj. F. & Son, New York, N. Y.

McAdoo, Thomas, Philadelphia, Pa.

National Pipe Bending Co., New Haven, Conn.

Petroleum Iron Works Co., Washington, Pa.

Rea, Wm. B., & Sons, Co., Pittsburgh, Pa.

Stillwell-Bierce & Smith-Vaile Co., Dayton, O.

Webster & Co., Warren, Camden, N. J.

Felting. (Hair.)
Reeder, Adamson & Co., Philadelphia, Pa.

Fencing. (Iron, Steel, Wire.)
Bolles Iron & Wire Works, J. E., Detroit, Mich.

Buffalo Wire Works Co., Buffalo, N. Y.

Duff & Co., Baltimore, Md.

Eureka Supply Co., Chattanooga, Tenn.

Ludlow-Saylor Wire Co., St. Louis, Mo.

New Jersey Wire Cloth Co., Trenton, N. J.

Fertilizer Machinery. (See Phosphate Mchry.)

Files.
Barnett Co., G. & H., Philadelphia, Pa.

Miller Oil & Supply Co., Indianapolis, Ind.

Nicholson File Co., Providence, R. I.

Filler. (Iron.)
Obermayer, S. Co., Cincinnati, O.

Wisconsin Graphite Co., Pittsburgh, Pa.

Filters. (Water.)
Boyle, Wm. B., & Sons, Co., Pittsburgh, Pa.

Filters. (Oil.)
Burt Mfg. Co., The Akron, O.

Capitol Co., Philadelphia, Pa.

Filter Presses.
Stillwell-Bierce & Smith-Vaile Co., Dayton, O.

Fire-Brick.
Carolina Portland Cement Co., Killian, S. C.

Georgia Vitrified Brick & Clay Co., Augusta, Ga.

Kriegshaber, V. H., Atlanta, Ga.

Maryland Lime & Cement Co., Balto., Md.

Obermayer Co., S., Cincinnati, O.

Ohio Fire-Brick Co., Oak Hill, O.

Pomona Terra Cotta Co., Pomona, N. C.

Powhatan Clay Mfg. Co., Richmond, Va.

Sivens, H., Sons Co., Macon, Ga.

Fire Extinguishers.
Badger Fire Extinguisher Co., Boston, Mass.

General Fire Extinguisher Co., Providence, R. I.

Fire Escapes.
Bolles Iron & Wire Works, J. E., Detroit, Mich.

Flexible Joints.
Moran Flexible Joint Co., Louisville, Ky.

Flooring. (Hardwood.)
Adams, J. M., Baltimore, Md.

Forman, Thomas, Co., Detroit, Mich.

Price & Heald, Baltimore, Md.

Wilco, Co., The T., Chicago, Ill.

Wilkins, Van S., Lumber Co., Mobile, Ala.

Flour and Grain Mill Machinery and Supplies.
Allis-Chalmers Co., Chicago, Ill.

Bartlett, C. O., & Snow Co., Cleveland, O.

Caldwell, H. W., & Son Co., Chicago, Ill.

DeLoach Mill Mfg. Co., Atlanta, Ga.

Gibbs, W. H., & Co., Columbia, S. C.

Nordyke & Marrison Co., Indianapolis, Ind.

Sprout, Waldron, & Co., Macon, Ga.

Warr, E. F., & Co., Baltimore, Md.

Wolf Co., Chambersburg, Pa.

Flue Scrapers. (For Boilers.)
Gem Mfg. Co., Pittsburgh, Pa.

Forges.
Sturtevant Co., B. F., Boston, Mass.

Forgings.
Alabama Iron Works, Mobile, Ala.

Wilcox, D., Mfg. Co., Mechanicsburg, Pa.

Taylor Iron & Steel Co., High Bridge, N. J.

Tompkins, D. A., Co., Charlotte, N. C.

Woods, T. B., Sons, Chambersburg, Pa.

Geologists.
Caldwell, H. W., & Son Co., Chicago, Ill.

Freeling & Robertson, Richmond, Va.

Governor. (Water Wheel.)
Seipie Governor Works, Akron, Ohio.

Graphite.
Detroit Graphite Mfg. Co., Detroit, Mich.

Dixon Crucible Co., J. A., Jersey City, N. J.

International Acheson Graphite Co., Niagara Falls, N. Y.

Obermayer, S. Co., Cincinnati, O.

Wisconsin Graphite Co., Pittsburgh, Pa.

Grates and Grate Bars.
McClave-Brooks Co., Scranton, Pa.

Miller Oil & Supply Co., Indianapolis, Ind.

Sanford-Day Iron Works, Knoxville, Tenn.

Grain Elevator Supplies.
Caldwell, H. W., & Son Co., Chicago, Ill.

Jedrej Mfg. Co., Columbus, O.

Link-Belt Engineering Co., Hicelowa, (Phila.) Pa.

Groase. (Lubricating.)
Cook's Sons, Adam, New York, N. Y.

Robinson, Wm. C., & Son, Baltimore, Md.

Grinding and Polishing Machinery.
Abrasive Material Co., The Philadelphia, Pa.

Carborundum Co., The, Niagara Falls, N. Y.

Monarch Emery & Co., Camden, N. J.

Norton Emery Wheel Co., Worcester, Mass.

Vitified Wheel Co., Westfield, Mass.

Groovers.
Hubber Bros., Rochester, N. Y.

Smith, H. B., Machine Co., Smithville, N. J.

Gunpowder.
Peterson Cartridge Co., Cincinnati, O.

Hammers. (Steam, Power, Pneumatic.)
Rand Drill Co., New York, N. Y.

Robinson, J. M., Mfg. Co., Cincinnati, O.

Savannah Locomotive & Car Works, Savannah, Ga.

Handle Mchry. (See Woodworking Mchry.)
Fay, J. A., & Egan Co., Cincinnati, O.

Root, B. M., York, Pa.

Hardware Specialties.
Wrightsville Hardware Co., Wrightsville, Pa.

Hay Tools.
Myers & Bro., F. E., Ashland, O.

Heating Apparatus.
American Blower Co., Detroit, Mich.

Andrews & Johnson Co., Chicago, Ill.

Boston Blower Co., Hyde Park, Mass.

Dixie Mfg. Co., Baltimore, Md.

Dowman-Dosier Mfg. Co., Atlanta, Ga.

General Steam Generator Mfg. Co., Baltimore, Md.

Peck-Hammond Co., The, Cincinnati, O.

Sturtevant Co., B. F., Boston, Mass.

Webster, Warren Co., Camden, N. J.

Hoisting Machinery.
American Ship Windlass Co., Providence, R. I.

Byers Machine Co., John F., Havana, N. Y.

Contractors' Plant Mfg. Co., Buffalo, N. Y.

Flory, S. Mfg. Co., Bangor, Pa.

Hardie-Tynes Mfg. Co., Birmingham, Ala.

Hays & Co., New York, N. Y.

Jedrej Mfg. Co., The, Columbus, O.

Link-Belt Engineering Co., Philadelphia, Pa.

Lidgerwood Mfg. Co., New York, N. Y.

Males Co., The, Cincinnati, O.

Price, S. M., Machinery Co., Norfolk, Va.

Moyer, J. W., & Co., Philadelphia, Pa.

Rawson & Morrison Mfg. Co., Cambridge, Boston, Mass.

Sprague Canning Machinery Co., Chicago, Ill.

Sullivan Machinery Co., Chicago, Ill.

Holists.
Pawling & Harnischfeger, Milwaukee, Wis.

Holists. (Pneumatic, Motor.)
Rand Drill Co., New York, N. Y.

Horse Shoes.
Old Dominion Iron & Nail Works Co., Richmond, Va.

The Diamond State Steel Co., Wilmington, Del.

Hoses.
Boston Belting Co., Boston, Mass.

Eureka Fire Hose Co., New York, N. Y.

N. J. Car Spring & Rubber Co., Jersey City, N. J.

Peckham Rubber Mfg. Co., New York, N. Y.

Voorhees Rubber Mfg. Co., Jersey City, N. J.

Hydrants.
Southern Hotel, Baltimore, Md.

Hydrants.
Glazogen Pipe & Foundry Co., Lynchburg, Va.

Ludlow Valve Mfg. Co., Troy, N. Y.

Wood, R. D., & Co., Philadelphia, Pa.

Hydraulic Machinery.
American, Chicago, Ill.

Watson-Stillman Co., New York, N. Y.

Wood, R. D., & Co., Philadelphia, Pa.

Hydraulic Rams.
Niagara Hydraulic Engine Co., Chester, Pa.

Ice-Making Machinery and Supplies.
Arctic Mch. Co., Canton, Ohio.

Barber Mfg. Co., A. H., Chicago, Ill.

Brown-Cochran Co., Lorain, O.

Columbus Iron Works Co., Columbus, Ga.

Frick Co., Waynesboro, Pa.

Healy Ice Machine Co., Chicago, Ill.

McWilliams, Joe., & Co., Louisville, Ky.

Pennsylvania Iron Works, Philadelphia, Pa.

Remington Machine Co., Wilmington, Del.

Stillwell-Bierce & Smith-Vaile Co., Dayton, O.

United Iron Works Co., Springfield, Mo.

Viller Mfg. Co., Milwaukee, Wis.

Vogt, Henry, Machine Co., Louisville, Ky.

Wolf Co., The, Fred. W., Chicago, Ill.

York Mfg. Co., York, Pa.

Incorporators. (Companies.)
Delaware Corporation Co., Wilmington, Del.

Delaware Trust Co., Wilmington, Del.

District of Columbia, District Co., Washington, D. C.

Indicators. (Steam Engines.)
Amer. Stm. Gauge & Valve Mfg. Co., Jam. Plain, Mass.

Crosby Steam Gauge & Valve Co., Boston, Mass.

Scranton Steam Pump Co., Scranton, Pa.

Industrial Appliances.
Athens Chamber of Commerce, Athens, Ga.

Lynchburg Traction & Light Co., Lynchburg, Va.

Lafayette Progressive Union, Thibodaux, La.

Old Dominion Land Co., Newport News, Va.

Rayne, L., C. W. Lyman, Secretary Progressive Union.

Richards, M. V. L., & T. Agent, Washington, D. C.

Seaboard Air Line, Portsmouth, Va.

Southern Pacific, Houston, Tex.

St. Louis & San Francisco Railroad, St. Louis, Mo.

Sutherland, Howard, Land Agent, Elkins, W. Va.

Industrial Railways.
Koppel, Arthur, New York City.

Injectors.
Jenkins Bros., New York, N. Y.

Linkenshimer Co., Cincinnati, O.

Ohio Injector Co., Wadsworth, O.

Pemberton Injector Co., Detroit, Mich.

Schofield, J. B., Sons, Co., Macon, Ga.

Simmons, John, Co., New York, N. Y.

Insulated Wire.
Electrical Material Co., Baltimore, Md.

Harvard Manufacturing Co., Wilkes Barre, Pa.

Insulators. (Glass.)
Electrical Material Co., Baltimore, Md.

Insulator Pins.
Allegheny Tin & Brack Co., Covington, Va.

Electrical Material Co., Baltimore, Md.

Houston & Liggett, Lewisburg, Tenn.

Insulator Pin Machinery.
Chattanooga Machinery Co., Chattanooga, Tenn.

Insurance.
Hartford Steam Boiler Inspection & Insurance Co., Hartford, Conn.

Maryland Casualty Co., Baltimore, Md.

Iron.
Alabama Cannon, Coal & Iron Co., Birmingham, Ala.

American Steel Works Co., New York, N. Y.

Bourne-Fuller Co., Cleveland, O.

Globe Rolling Mill, Cincinnati, O.

Old Dominion Iron & Nail Works Co., Richmond, Va.

BAGS

Made from Cotton and Burlap, for every known purpose.

Importers of all widths and grades

BURLAP



TWINE

All sizes and all grades made from best selected Fibres.

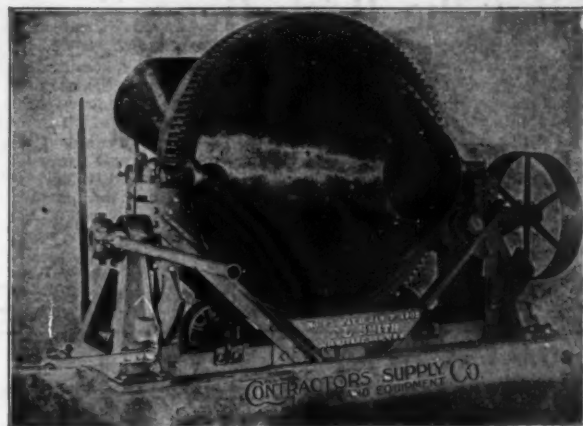
ROPE

Why Mix by Hand, The Smith Mixer

When will save three-fourths of the labor cost of hand mixing? At the same time the concrete made by The Smith Mixer will be far better than the same material hand mixed. With a Smith Mixer you get two results:

1. Your Work is the Best.
2. Its Cost is the Least.

Why not investigate? We will help you to do so.



REPRESENTED BY: Colonial Supply Co., Boston, Mass.; Jno. L. Kirk, Pittsburg, Pa.; Frank H. Woodruff, New York, N. Y.; The Wm. Pattison Supply Co., Cleveland, Ohio.; Henshaw Bulkley Co., San Francisco and Seattle.

Contractors' Supply & Equipment Co., Office and Salesrooms, 232 Fifth Ave., CHICAGO.

The Old Reliable

"GIANT" PORTLAND CEMENT.

Exclusively used on Largest Cement Contract Ever Let in The World,

NEW YORK SUBWAY,
1,500,000 BARRELS.

AMERICAN CEMENT CO.

23 SOUTH 15TH ST.,

PHILADELPHIA, PA.

AGENCIES:

LESLEY & TRINKLE CO.

UNITED BUILDING MATERIAL CO.

23 South 15th Street,

13-21 Park Row, New York.

Philadelphia, Pa.

101 Milk St., Boston, Mass.

DEXTER
PORTLAND CEMENT.

HIGHEST ATTAINABLE STANDARD

Samuel H. French & Co., Sole Agents,

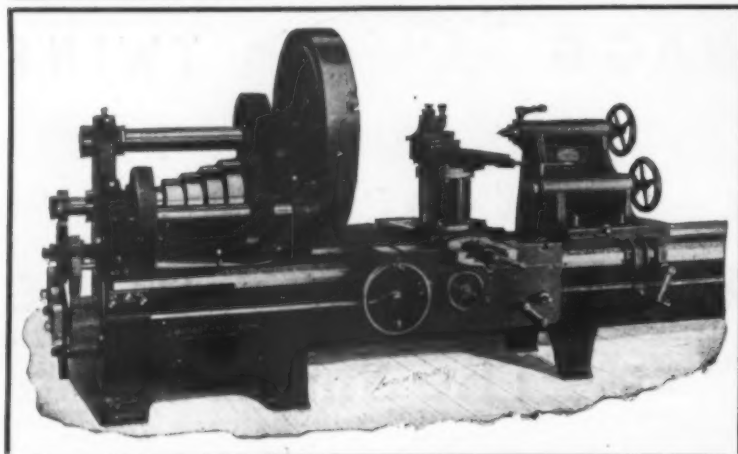
Established 1844.

Philadelphia.

The L. SCHREIBER & SONS CO.

Designers

Builders

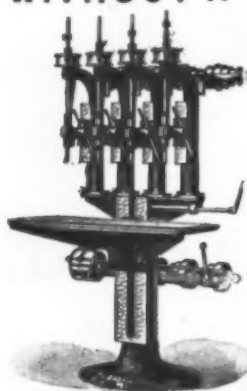


I've Put the Back Gears in Front

on my New Heavy Pattern 20"-48" Double Spindle Lathe, because that changes the relative positions of the two spindles, permits the use of a larger intermediate gear in driving the large spindle, and increases the power by a good 25 per cent. By this new arrangement I also get rid of the lifting thrust of the drive and keep the pressure downward in the main bearings all the time. This gives you a tool with ample power for any work up to 48" diameter, one that will do large or small work with equal facility, with double the screw-cutting capacity of any ordinary lathe, a 2 1/2" hollow spindle, and a wide range of feeds and speeds, for less money than a single big lathe would cost. Strikes me this is worth looking into. How does it strike you?

J. J. McCabe, Fourteen Dey Street, New York City.

WITHOUT A RIVAL.



Proven by Experience to be the best.
25 Different Styles.
1 to 7 Spindles.
11 inch, 18 inch. Tables any size.
Large Pulleys for Power.
Perfect Balance.
Also AUTOMATIC Pin Machine
Universal Grinder for Tool Room.

Send for Circulars No. 1-5-45.
Polishing Straps to order.

THE ONLY H. G. BARR.
WORCESTER, MASS.

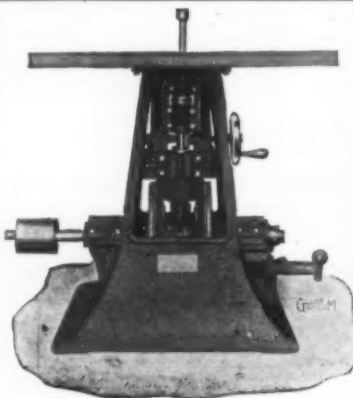
... FOR ... Mill and Machinery Supplies

Get Prices from
Cotton States Belting & Supply Co.
Main Store—ATLANTA, GA.
Branch—SAVANNAH, GA.

CHAS. LEFFLER & CO.

49-51 Clymer Street, BROOKLYN, N. Y.

MACHINERY FOR THE MANUFACTURE OF BRIAR PIPES.
Musical String Machinery.



Single Spindle Reversible Shaper.

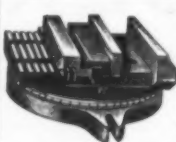
Single and Double Spindle Shapers, Combination Shaper and Carver, Cutter Heads, Wing Cutters, etc. Designers of Special Machinery.

Moshannon Manufacturing Co.
PHILIPSBURG, PENNA.

Tools for Sheet Metal Workers,

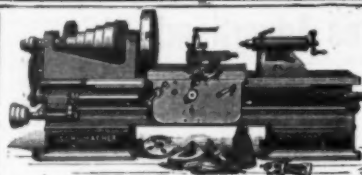
including Tinsmiths' Tools, Squaring and Rotary Shears, Presses, Rolls, Punches, Can Making Machinery, etc., made by the

Niagara Machine & Tool Works, Buffalo, N. Y.

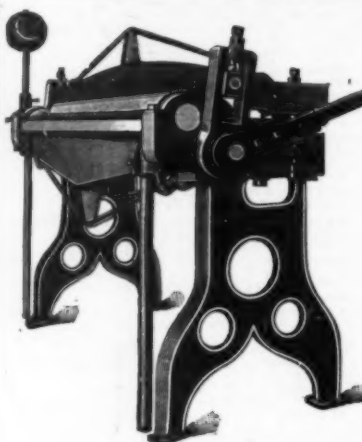


SKINNER Lathe, Drill & Planer CHUCKS.

We are pleased to mail 6"x9" illustrated Catalog free.
The SKINNER CHUCK MFG. CO.
New Britain, Conn.



SCHUMACHER & BOYE,
Engine Lathes,
Cincinnati, Ohio.



Heavy Bending Brakes,
Cornice Brakes,
Corrugating Machines,
Crimping Rolls,
Foot and Power.
Curved Moulding Mach.,
Presses, Dies and
Shears.

THE J. M. ROBINSON MFG. CO.
Cincinnati, Ohio.

4-FT. BRAKE.

MACHINERY

A few of our Stock of New Machines Ready for Immediate Shipment.

One 38 in.x20 ft. New Haven Engine Lathe.
One each No. 2, No. 3 and No. 4 Brown & Sharpe Universal Milling Machines.
One 6 ft. Fosdick & Holloway Full Universal Radial Drill.
One 36 in.x16 ft. Schumacher & Boye Engine Lathe.
One 26 in.x28 in.x16 ft. McCabe Double Spindle New Style Engine Lathe, with Geared Face Plates.
One 24 in.x16 ft. Draper Engine Lathe, with Triple Gears and T. A.
One 28 in.x16 ft. Draper Engine Lathe, with Triple Gears and T. A.
Lathes from 10 in. up and Shapers of all strokes. A complete line of Drill Presses, Shapers, Planers, etc., always in stock.

Small Tools of Every Variety and Size, Complete Assortment.

WRITE US ABOUT YOUR NEEDS.

BAIRD MACHINERY CO.

123-125 Water Street,

PITTSBURG, PA.

The Bailey-Lebby Co.

MACHINERY and SUPPLIES.

AGENTS FOR

Lodge & Shipley Lathes
Cincinnati Milling Machines
Cincinnati Shapers
Cincinnati Planers
Cincinnati Upright Drills
Bickford Radial Drills

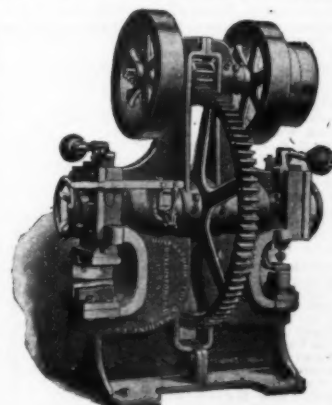
A line of good, reliable tools.

CHARLESTON, S. C.

Try The B-L Co. Anti-Friction Babbitt.

Our No. 1

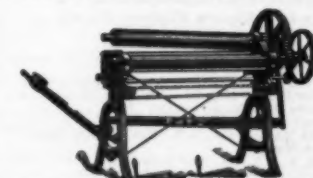
Double Punch and Shear



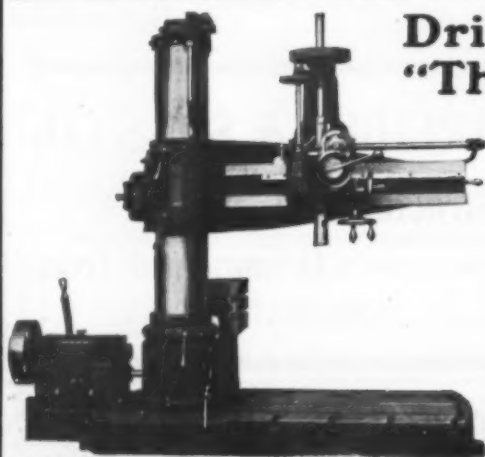
A good, well built tool, specially adapted for Machine and Blacksmith Shops, Wagon Works and Fence Makers. A very handy machine and price is right. Catalogue for the asking.

Royersford Foundry & Machine Co.
ROYERSFORD, PA.

Sheet Metal Working Machinery.



Pat'd. Automatic self-opening Forming Rolls, all sizes, for bending up to 1-inch plates. Also Crimping Rolls, seven styles; Squaring Shears and Punches; also combined Shears and Punches.
BERTSCH & CO., CAMBRIDGE CITY, IND.



Drilling Truths of "The New Bickford Radial"

We do not punch holes, nor do we run the tools at excessive speeds. We merely take advantage of every known means to augment production. When compared with other Radials, this machine has twice as many speeds, and from two to four times as many feeds. Our drill embodies everything that modern practice has shown to be essential to the rapid production of true work. Our little book, "56 Points of Vantage" will help convince you of these truths. Send for it.

The Bickford Drill & Tool Company,
CINCINNATI, OHIO, U. S. A.

AGENTS. J. H. McArdle, New Orleans, La. Echols-Smith Hardware Co., Birmingham, Ala. The Fairbanks Co., Baltimore, Md. Georgia Supply Co., Savannah, Ga. W. E. Shipley, Philadelphia, Pa. Prentiss Tool & Supply Co., New York, Buffalo and Boston. Brown & Zortman Machinery Co., Pittsburg, Pa. Marshall & Huschart Machinery Co., Chicago, Cleveland and Cincinnati. J. W. Wright & Co., St. Louis, Mo. Henshaw, Bulkley & Co., San Francisco and Seattle, Wash. Robinson & Cary Co., St. Paul, Minn. Scott Supply & Tool Co., Denver, Col. The Henry Walke Co., Norfolk, Va.

Classified Index of Articles Advertised

For ALPHABETICAL INDEX See Page 32.

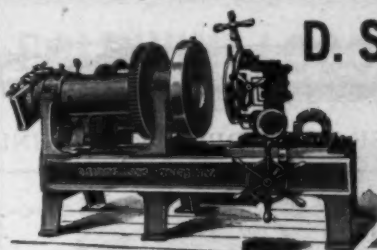
Iron Brokers.
Armstrong, R. & B. Co., Atlanta, Ga.
Cox, Jr., Justice & Co., Inc., Philadelphia, Pa.
Males Co., Cincinnati, O.
Jackets. (Lifting, Truck and Oil Well.)
Watson-Stillman Co., New York, N. Y.
Kettles. (Steam Jacket.)
Badger, E. B., & Sons Co., Boston, Mass.
Petroleum Iron Works Co., Washington, Pa.
Knife Grinders. (For Automatic.)
Fay, J. A., & Son Co., Cincinnati, O.
Smith, H. B., Machine Co., Smithville, N. J.
Knitting Machinery.
Campbell & Glue Machine Co., Oshos, N. Y.
May Knit. Mch. & Needle Co., Franklin Falls, N. H.
McMichael & Wildman Mfg. Co., Norristown, Pa.
Nye & Trelick Co., Philadelphia, Pa.
Ruth Auto. Knitting Machine Co., York, Pa.
Scott & Williams, Philadelphia, Pa.
Lamps. (Lamp and Incandescent.)
Alexander, Jr., Co., S. E. Charlotte, N. C.
Electrical Material Co., Baltimore, Md.
Electric Supply Co., Savannah, Ga.
General Electric Co., Schenectady, N. Y.
Kentucky Electric Co., Owensboro, Ky.
Piedmont Electric Co., Asheville, N. C.
Shelby Electric Co., Shelby, O.
Standard Electric Co., Norfolk, Va.
Sterling Electrical Mfg. Co., Warren, O.
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.
Lamp Adjuster. (Incandescent.)
Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.
Pacific Electric Co., La Crosse, Wis.
Lamp Replacer. (Incandescent.)
Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.
Lamp Shades & Guards. (Incandescent.)
Incandescent Elec. Lgt. Manipulator Co., Boston, Mass.
Landa.
Abbott, F. C., & Co., Charlotte, N. C.
Brobst, Fendig & Co., Brunswick, Ga.
Clark, Chas. E., Augusta, Ga.
Martin & Bro., Augusta, Ga.
Richards, M. V., Land & Industrial Agt., Wash., D. C.
Seaboard Air Line, Portsmouth, Va.
Suberland, Howard, Land Agent, Elkins, W. Va.
Southern Pacific, Houston, Tex.
St. Louis & San Francisco Railroad, St. Louis, Mo.
Watson, E. E., Atlanta, Ga.
Wingard, O. H., St. Louis, Mo.
Lathes.
Baird Mch. Co., Pittsburg, Pa.
Barnes, W. F., & J., Co., Rockford, Ill.
Gibbs, W. H., & Co., Columbia, S. C.
Robinson, W. G., & Son, Co., Baltimore, Md.
McCabe, J. J., New York, N. Y.
Price, S. M., Machinery Co., Norfolk, Va.
Savannah Loco. Works & Supply Co., Savannah, Ga.
Schumacher & Boye, Cincinnati, O.
Walke, Henry, Co., Norfolk, Va.
Laundry Machinery.
Adams Laundry Machinery Co., Troy, N. Y.
Dawson, A. L., & Co., Chicago, Ill.
Sinclair Co., S. H., Chicago, Ill.
Wilson Laundry Machinery Co., Columbia, Pa.
Lead. (Sheet.)
Robertson Mfg. Co., James, Baltimore, Md.
Lead and Tin. (Fig.)
Hertz, Theo., Metal Co., St. Louis, Mo.
Ryan & Co., J. J., Chicago, Ill.
Letterers. (FATTER.)
Britt, A. W., Seneca Falls, N. Y.
Lime.
Carolina Portland Cement Co., Charleston, S. C.
Kreighhaber, V. H., Atlanta, Ga.
Maryland Lime & Cement Co., Balto., Md.
Southeastern Lime & Cement Co., Charleston, S. C.
Warner, Charles Co., Wilmington, Del.
Locomotive Builders.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, Philadelphia, Pa.
Byers, Jno. P., Mch. Co., Ravenna, O.
Ultimax Mfg. Co., Corry, Pa.
Low, Edgar S., Co., Pittsburg, Pa.
Males Co., Cincinnati, O.
Forster, H. K., Co., Pittsburg, Pa.
Looms.
American Supply Co., Providence, R. I.
Looms and Weaving Machinery.
American Supply Co., Providence, R. I.
Draper Co., Hopedale, Mass.
Fairmount Machine Co., Philadelphia, Pa.
Kilburn, Lincoln & Co., Fall River, Mass.
Lowell Machine Shop, Boston, Mass.
Mason Machine Works, Taunton, Mass.
Tompkins, D. A., Co., Charlotte, N. C.
Lubricating Compounds.
Galena Signal Oil Co., Galena, Pa.
Robinson, Wm. C., & Sons Co., Baltimore, Md.
Cook's Adam, Sons, New York, N. Y.
Lubricators and Oil Cups.
Cook's Sons, Adam, New York, N. Y.
Crosby Steam Gage & Valve Co., Boston, Mass.
Detroit Lubricator Co., Detroit, Mich.
Lunkenheimer Co., Cincinnati, O.
Penberthy Injector Co., Detroit, Mich.
Lumber.
Kirk Lumber Co., Houston, Tex.
Montgomery Lumber Mfg. Co., Montgomery, Ala.
Price & Heald, Baltimore, Md.
Red Cypress Lumber Co., Macon, Ga.
Hudson Lumber Co., Macon, Ga.
Wilkins, Van S., Lumber Co., Mobile, Ala.
Machinery. (Special.)
Ellipse Mch. Co., Chicago, Ill.
Lester, Charles, & Co., Brooklyn, N. Y.
Moshannon Mfg. Co., Philadelphia, Pa.
Pennsylvania Iron Works, Philadelphia, Pa.
Royerford Foundry & Machine Co., Boye, Pa.
Machinery Bargains. (NEW & SEC. HAND.)
Albeck, Geo. E., New York, N. Y.
American, Chicago, Ill.
American Elec. Supply & Mfg. Co., New York, N. Y.
Armstrong, E. & B. Co., Atlanta, Ga.
Baker, H. C., & Co., Philadelphia, Pa.
Bennett, G. L., New York, N. Y.
Booth & Flynn, Ltd., Pittsburg, Pa.
Bovens & Street Equipment Co., Norfolk, Va.
Braden, Jas. S., New York, N. Y.
Brown & Fortman Machinery Co., Pittsburg, Pa.
Caine & Pitts, Philadelphia, Pa.
Carlin Mch. & Supply Co., Allegheny, Pa.
Casey, D. L., Mch. Co., Springfield, O.
Chicago House Wrecking Co., Chicago, Ill.
Cleveland Belting & Machinery Co., Cleveland, O.
Clyde Mch. Works, Chicago, Ill.
Columbia Supply Co., Columbia, S. C.
Columbus Iron & Steel Co., Columbus, O.
Contractors' Equipment Co., Philadelphia, Pa.
Contractors' Supply Co., Pittsburg, Pa.
Contractors' Supply & Equipment Co., Chicago, Ill.
Cox, Justice, Jr., & Co., Ltd., Philadelphia, Pa.
Driscoll, John T., & Co., Chicago, Ill.
Fidelity Machine & Metal Co., Philadelphia, Pa.
Garvin Machine Co., New York, N. Y.
Harfelder-Garbutt Co., Savannah, Ga.
Hittner, H. A., Sons, Philadelphia, Pa.
Huntington Machinery & Supply Co., Wilkesbarre, Pa.
Kennedy, L. E., & Co., New York, N. Y.
Kohn, J. W., & Co., Cleveland, O.
Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mch. Tool Co., Cincinnati, Ohio.
Luce, J. C. M., Baltimore, Md.
Malloy, J. D., Baltimore, Md.
Mangel's Machinery Exchange, Baltimore, Md.
Poullier & Co., Philadelphia, Pa.
Price Machinery Co., Chicago, Ill.
Reister, MacGovern & Co., New York, N. Y.
Samuel, Frank, Philadelphia, Pa.
Saxton, J. C., New York, N. Y.
Seyler's, L. F., Sons, Philadelphia, Pa.
Shaw, Willis, Chicago, Ill.
Stewart, John A., Electric Co., Cincinnati, O.
Straub Machinery Co., Cincinnati, O.
Thompson, Son & Co., New York, N. Y.

Tomey, Frank, Philadelphia, Pa.
Trampe, Charles F., St. Louis, Mo.
Waters, John A., & Co., Richmond, Va.
Wicks Bros., Pittsburg, Pa.
Wolf, L. & Bro., Cincinnati, O.
Wood & Co., Chicago, Ill.
Machine Tools.
Baird Mch. Co., Pittsburg, Pa.
Barnes, W. F., & J., Co., Rockford, Ill.
Bickford Drill & Tool Co., Cincinnati, O.
Cincinnati Milling Machine Co., Cincinnati, O.
Greaves, Klusman & Co., Cincinnati, O.
Landis Tool Co., Waynesboro, Pa.
McCabe, J. J., New York, N. Y.
Pratt & Whitney, Hartford, Conn.
Price, S. M., Machinery Co., Norfolk, Va.
Savannah Loco. Works & Supply Co., Savannah, Ga.
Schumacher & Boye, Cincinnati, O.
Walke, Henry, Co., Norfolk, Va.
Mail Boxes.
Outler Mfg. Co., Rochester, N. Y.
Mattresses.
Perfection Mattress Co., Birmingham, Ala.
Mechanical Draft.
Allington & Curtis, Mich.
American Blower Co., Detroit, Mich.
Andrews & Johnson Co., Chicago, Ill.
Boston Blower Co., Hyde Park, Mass.
Cincinnati Exhaust & Blow Pipe Co., Cincinnati, O.
Dixie Mch. Co., Baltimore, Md.
Hartford Blower Corp., Hartford, Conn.
Sturtevant, H. F., Co., Boston, Mass.
Memorial Windows.
Capital City Art Glass Works, Atlanta, Ga.
Mercantile Agencies.
International Mercantile Agency, New York, N. Y.
Merry-Go-Rounds.
Herschell-Spittman & Co., North Tonawanda, N. Y.
McIntire, F. C., & Co., Charlotte, N. C.
Metal Working Machinery.
Baird Mch. Co., Pittsburg, Pa.
Barnes, W. F., & J., Co., Rockford, Ill.
Bertsch & Co., Cambridge City, Ind.
Bickford Drill & Tool Co., Cincinnati, O.
Cincinnati Milling Machine, Cincinnati, O.
Gibbs, W. H., & Co., Columbia, S. C.
Greaves, Klusman & Co., Cincinnati, O.
Landis Tool Co., Waynesboro, Pa.
McCabe, J. J., New York, N. Y.
Niagara Machine & Tool Works, Buffalo, N. Y.
Pratt & Whitney Co., Hartford, Conn.
Price, S. M., Machinery Co., Norfolk, Va.
Robinson, J. M., Mfg. Co., Cincinnati, O.
Royerford Foundry & Machine Co., Boye, Pa.
Savannah Loco. Works & Supply Co., Savannah, Ga.
Schumacher & Boye, Cincinnati, O.
Walke, Henry, Co., Norfolk, Va.
Whitton Machine Co., D. E., New London, Conn.
Meeters. (Gas.)
Pittsburg Meter Co., E. Pittsburg, Pa.
Meeters. (Water.)
Pittsburg Meter Co., E. Pittsburg, Pa.
Worthington, Henry B., New York, N. Y.
Mill Engineers and Architects.
Collier & Brown, Atlanta, Ga.
Dyer, D. H., & Son, Fall River, Mass.
Makepeace, C. R., & Co., Providence, R. I.
Paray, C. A. M., & Co., Providence, R. I.
Robbins, O. A., Charlotte, N. C.
Shaw, Fred, Co., Augusta, Ga.
Tompkins, D. A., Co., Charlotte, N. C.
Whaley, W. S. Smith & Co., Columbia, S. C.
Wheeler & Bunge, Charlotte, N. C.
Milling Machines.
Bailey-Lebby Co., Chicago, S. C.
Baird Mch. Co., Pittsburg, Pa.
Cincinnati Milling Machine Co., Cincinnati, O.
Walke, Henry, Co., Norfolk, Va.
Mill Supplies.
Alexander, H. B., Jr., Co., Charlotte, N. C.
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Case Mfg. Co., Columbus, O.
Clark & Hines, Baltimore, Md.
Columbia Supply Co., Columbia, S. C.
Cotton States Belting & Supply Co., Atlanta, Ga.
Gainesville Iron Works, Gainesville, Ga.
Greenwald Co., I. & E., Cincinnati, O.
Harfelder-Garbutt Co., Savannah, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Miller Oil & Supply Co., Indianapolis, Ind.
Munson Bros., Co., Utica, N. Y.
Simmons, John, Co., New York City.
Smith-Courtney Co., Richmond, Va.
Mineral Wool.
U. S. Mineral Wool Co., New York, N. Y.
Mining Machinery. (Gold, Copper, Slate, etc.)
Bartlett, C. O., & Snow Co., Cleveland, O.
Crescent Co., Geo. V., New York, N. Y.
Flory, S. Mfg. Co., Bangor, Pa.
Ingersoll-Sergeant Drill Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Northern Electric Mfg. Co., Madison, Wis.
Rawson & Morrison Mfg. Co., Cambridge, Boston, Mass.
Sullivan Machinery Co., Chicago, Ill.
Mixing Machinery.
Bartlett, C. O., & Snow Co., Cleveland, O.
Contractors' Supply & Equipment Co., Chicago, Ill.
Drake Standard Mch. Wks., Chicago, Ill.
Dunning, W. D., Syracuse, N. Y.
Eansome Concrete Machinery Co., New York, N. Y.
Walker & Elliott, Wilmington, Del.
Mortar Cores.
Chattanooga Paint Co., Chattanooga, Tenn.
French, Samuel H., & Co., Philadelphia, Pa.
Nails. (Cut.)
Old Dominion Iron & Nail Works Co., Richmond, Va.
Nails. (Wire.)
Ludlow-Saylor Wire Co., The St. Louis, Mo.
Oats Cleaner. (AUTOMATIC.)
Kasper Oats Cleaner Co., Chicago, Ill.
Office Fixtures.
Dearborn Desk Co., Birmingham, Ala.
Himmel, M. L., & Son, Baltimore, Md.
Oils.
Cook's Adam, Sons, New York, N. Y.
Brid, W. M., & Co., Charleston, S. C.
Galena-Signal Oil Co., Franklin, Pa.
Ironides Co., Columbus, O.
Miller Oil & Supply Co., Indianapolis, Ind.
Robinson, Wm. C., & Son, Co., Baltimore, Md.
Oil-Burning Appliances.
Petroleum Iron Works Co., Washington, Pa.
Rockwell Engineering Co., New York, N. Y.
Olives.
Gem Mfg. Co., Pittsburg, Pa.
Ironides Co., Columbus, O.
Lunkenheimer Co., Cincinnati, O.
Organizers and Developer.
MacAfee, John Blair, Philadelphia, Pa.
Mechanics' Electric Co., Boston, Mass.
Railways & Light Co., Baltimore, Md.
Rutler, C. H., Easton, Pa.
Zell, Robt. Ross, Birmingham, Ala.
Packing.
Baltimore Engine Co., Baltimore, Md.
Boston Belting Co., Boston, Mass.
Broderick & Bascom Rope Co., St. Louis, Mo.
Jenkins Bros., New York, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Pennsylvania Rubber Mfg. Co., New York, N. Y.
Pennsylvania Rubber Co., New York, N. Y.
Voorhes Rubber Mfg. Co., Jersey City, N. J.
Paint. (Cold Water.)
Bird, J. A., & W., & Co., Boston, Mass.
Columbia Refining Co., New York, N. Y.
F. M. Ewing & Co., Boston, Mass.
Paint. (Boiling, etc.)
Armstrong Mfg. Co., The Richmond, Va.
Barrett Mfg. Co., Philadelphia, Pa.
Bird, W. M., & Co., Charleston, S. C.
Buchanan-Foster Co., Philadelphia, Pa.

D. SAUNDERS' SONS

Manufacturers of

Pipe Cutting and Threading Machines

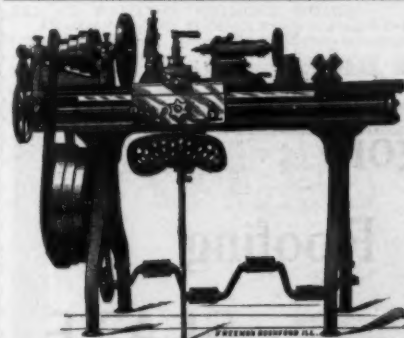


for Pipe-Mill and Steam Fitters' Use. Tapping Machines for Steam Fitting.
Also Steam and Gas Fitters' Hand Tools.

SEND FOR CIRCULARS.

No. 25 Atherton Street,

YONKERS, N. Y.



LATHES

FOR THE
Electrician,
Experimenter,
General Machine
Shop Work.

Our lathes are furnished for steam or foot-power.
Screw Cutting Lathes from 9" to 13" swing; elegant in design; superior in workmanship.

W. F. & JOHN BARNES CO.
221 Ruby Street, Rockford, Ill.
CAREY MACHINERY & SUPPLY CO., Agents.
BALTIMORE, MD.



COMPLETE
LINE
UPRIGHT
DRILLS.

SEND
FOR
CATA-
LOGUE.

From a
Light
Friction
Disk
DRILL
to a
42-inch
Back
Geared
Sliding
Head
DRILL

NORTON EMERY AND CORUNDUM WHEELS.

Emery Wheel Machinery.

NORTON EMERY WHEEL CO., Worcester, Mass.

CAREY MCHY. & SUPPLY CO., Agents, Baltimore, Md. CHICAGO STORE—25 So. Canal St.

**A Modern Machine for
Up-to-date Machine Shops
Gear Cutting Machines.**

The general design of these machines affords the greatest possible convenience of adjustment and operation upon all varieties of work. Worms, Face and Bevel Wheels, etc. The Cutter Head, the Cutter Spindle and the Facing Mechanism combine special features. In use throughout the North and South. Sent on trial to responsible parties. Send for 1903 pamphlet.

The D. E. Whitton Machine Co.
NEW LONDON CONN.

THE E. W. VANDUZEN CO., Established 1837.

Prop's THE BUCKEYE BELL AND BRASS FOUNDRY,

CINCINNATI, OHIO, U. S. A.

Founders of High Grade Castings in

BRASS, GUN METAL, BRONZE and PHOSPHOR BRONZE.

For Elasticity and Great Tensile Strength, we recommend our

POMPEIAN BRONZE.

Babbitt and Anti-Friction Metals.

Correspondence Solicited.



MORSE TWIST DRILL & MACHINE CO., NEW BEDFORD, MASS., U. S. A.

No. 109 K.
COUNTERBORES,
With Morse Taper Shanks.

Counterbores are furnished either singly or in sets, consisting of one counterbore for head of screw with guide of body size, one counterbore for head with guide of tap drill size, and one counterbore to enlarge a tap drill hole to body size.

BUY YOUR

Genuine

Bangor

Roofing

SLATE

Direct from the

MANUFACTURER

**GENUINE BANGOR SLATE
COMPANY,**

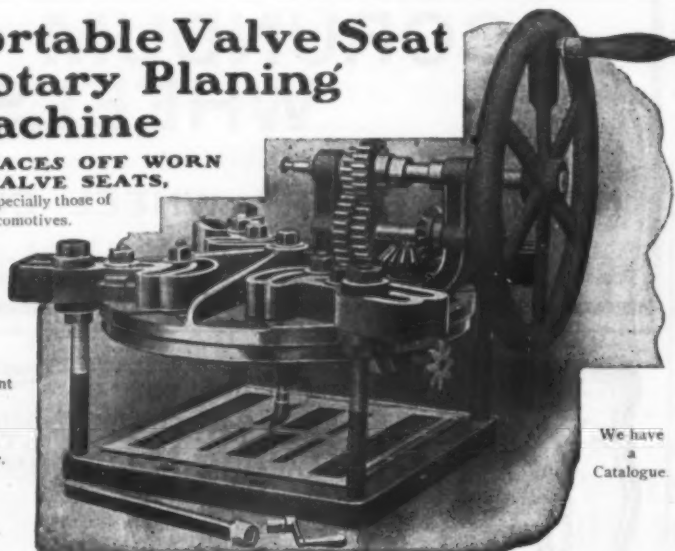
EASTON,

PENNA.

**Portable Valve Seat
Rotary Planing
Machine**

**FACES OFF WORN
VALVE SEATS,**
especially those of
locomotives.

No
subsequent
filing
or
scrapping
necessary.



We have
a
Catalogue

Each machine is furnished with sample cutting tool, wrenches and hand fly-wheel.

H. B. Underwood & Co., Philadelphia, Pa.
L. B. FLANDERS MACHINE WORKS.

American Locomotive Co.

General Office, 25 Broad St., NEW YORK CITY.

BUILDERS OF

Locomotives

For all classes
of services.



**Mining Locomotives, Logging Locomotives,
Compressed Air Locomotives, Contractors' Locomotives,**

Schenectady Works, Schenectady, N. Y.
Brooks Works, Dunkirk, N. Y.
Pittsburg Works, Allegheny, Pa.
Richmond Works, Richmond, Va.

Cooke Works, Paterson, N. J.
Rhode Island Works, Providence, R. I.
Dickson Works, Scranton, Pa.
Manchester Works, Manchester, N. H.

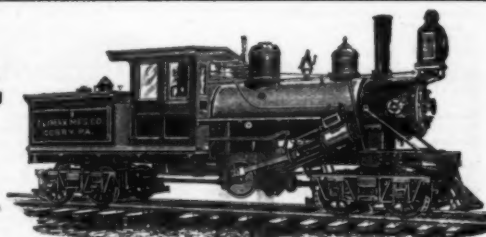
CLIMAX

Geared Locomotives,

For Wood or
Iron Rail.

Send for Illustrated Catalog.

CLIMAX MFG. CO.
CORRY, PA.



LIGHT LOCOMOTIVES.

All Gauges, Sizes and Designs.

Steam and Compressed Air.

5th Edition Catalogue mailed free to intending purchasers (or to
accommodate others on receipt of 50c. in stamps).

H. K. PORTER CO.

6th Ave., PITTSBURG, PA.

Locomotives, narrow and wide gauge on hand.



ROSS-MEEHAN FOUNDRY CO.

Chattanooga,
Tennessee.

**GREY & MALLEABLE
IRON FOUNDERS.**
M.G.B. COUPLERS.

CASTINGS

IRON FOR QUICK SHIPMENT STEEL

BARs, PLATES, SHEETS, TUBES, BEAMS, CHANNELS, ANGLES,
STEEL TIRES, ETC.

We Carry a Large Stock of the Above in Our Warehouses.

Write for our Monthly Stock List.

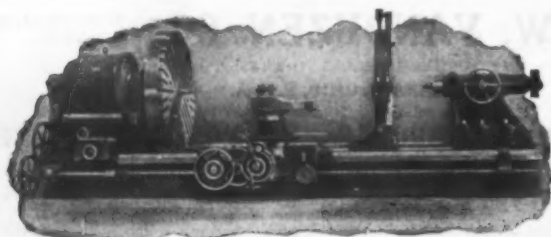
THE GLOBE ROLLING MILL CO., Cincinnati, O.

**STEEL
CASTINGS**

OPEN HEARTH Steel Castings of every description, for
Electrical Machinery; Dredging, Roll-
ing and Sugar Mill Machinery; Locomotive, Railroad and
Bridge Work, etc.

McHAFFIE Steel Castings of all shapes and sizes, from 1
lb. up. Superior for Crankshafts, Gearing and
other purposes where great wearing results are required.

CHESTER STEEL CASTINGS CO.
Works, CHESTER, PA. Office, 407 Sanson St., PHILA., PA.
Correspondence Solicited.



Savannah Locomotive Works & Supply Co.

Savannah, Georgia.

LOCOMOTIVES — Bought, Sold, Exchanged, Rebuilt.

AGENTS:
Nagle Engines and Boilers.
Niles-Bement-Pond Co.
Midvale Steel Co.
Weinman Machine Co.

Niles-Bement Pond Co.
High-Grade Metal
Working Tools.
Write us for Quotations.

Classified Index of Articles Advertised

For ALPHABETICAL INDEX See Page 32

Chattanooga Paint Co., Chattanooga, Tenn.
Detroit Graphite Mfg. Co., Detroit, Mich.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Eastern Granite Roofing Co., New York, N. Y.
French, Samuel H., & Co., Philadelphia, Pa.
Ironside Co., Columbus, O.
Simmons, John, Co., New York, N. Y.
Standard Paint Co., New York, N. Y.
Wisconsin Graphite Co., Pittsburg, Pa.
Paper. (Bookbinding, Engraving, etc.)
Armstrong Mfg. Co., The, Richmond, Va.
Barrett Mfg. Co., Philadelphia, Pa.
Buchanan-Foster Co., Philadelphia, Pa.
Eastern Granite Roofing Co., New York, N. Y.
Garrett, C. S., & Son, Co., Philadelphia, Pa.
National Roofing & Supply Co., Louisville, Ky.
Standard Paint Co., The, New York, N. Y.
Paper. (Hand, Emery.)
Becker, Adamson & Co., Philadelphia, Pa.
Parquet.
Adams, J. M., Baltimore, Md.
Paste. (Graphite Pipe Joint.)
Wisconsin Graphite Co., Pittsburg, Pa.
Pattern Makers' Machinery.
Far, J. A., & Son Co., Cincinnati, O.
Patterns. (Metal.)
Richmond Pattern Works, Richmond, Va.
Ryan, J. J., & Co., Chicago, Ill.
Patterns. (Wooden.)
Richmond Pattern Works, Richmond, Va.
Paving Material.
Barrett Mfg. Co., Philadelphia, Pa.
National Roofing & Supply Co., Louisville, Ky.
Perforated Metal.
Aitchison Perforated Metal Co., Robert, Chicago, Ill.
Beckley, A. J., Co., Garwood, N. J.
Caldwell, H. W., & Son Co., Chicago, Ill.
Harrington & King Perforating Co., Chicago, Ill.
Hendrick Mfg. Co., The, Ltd., Carbondale, Pa.
Ladlow-Snyder Wire Co., The, St. Louis, Mo.
Mundt, Charles, & Son, New York, N. Y.
Simpson, E. B., & Son, New York, N. Y.
Petroleum. (Fuel.)
Gulf Refining Co., Pittsburg, Pa.
Phosphate Machinery.
Bailey-Lobby Co., The, Charleston, S. C.
Bradley Pulverizer Co., Boston, Mass.
Cameron & Barkley Co., Charleston, S. C.
Crescent Co., Geo. V., New York, N. Y.
Foot Mfg. Co., Springfield, O.
Kent Mill Co., New York, N. Y.
Link-Belt Engineering Co., Philadelphia, Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulverizer Co., Chicago, Ill.
Simpson, J. S., & G. F., Brooklyn, N. Y.
Smith & Co., F. L., New York, N. Y.
Tompkins, D. A., Co., Charlotte, N. C.
Walk & Murdoch Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.
Phosphor Bronze. (Wire, Rods, Sheets.)
Ryan, J. J., & Co., Chicago, Ill.
Phosphor Bronze Smelting Co., Ltd., Philadelphia, Pa.
Van Dusen, E. W., Co., Cincinnati, O.
Pianos and Organs.
Steff, Charles M., Baltimore, Md.
Pig Iron.
Alabama Coal & Iron Co., Birmingham, Ala.
Bourne-Fuller Co., Cleveland, O.
Piling.
International Crocoting & Const. Co., Galveston, Tex.
West Pascagoula Crocoting Wks., W. Pascagoula, Miss.
Pillow Blocks.
Caldwell, W. E., Co., Louisville, Ky.
Crescent Co., Geo. V., New York, N. Y.
Golden's Foundry & Machine Co., Columbus, Ga.
Kenney Pulley Co., Toledo, O.
Pine Products.
Standard Turpentine Co., New York, N. Y.
Pipe. (Brass and Copper.)
Waterbury Brass Co., New York, N. Y.
Pipe. (Cast Iron.)
Dimmick Pipe Co., Birmingham, Ala.
General Fire Extinguisher Co., Providence, R. I.
Glanorgan Pipe & Foundry Co., Lynchburg, Va.
Moore, Edgar M., & Co., Pittsburg, Pa.
U. S. Cast Iron Pipe & Foundry Co., Chattanooga, Tenn.
Wood, B. D., & Co., Philadelphia, Pa.
Pipe. (Cotton.)
National Pipe Bending Co., New Haven, Conn.
Wolf Co., Fred. W., Chicago, Ill.
Pipe. (Lead.)
Robertson Mfg. Co., James, Baltimore, Md.
Pipe. (Riveted.)
American Spiral Pipe Works, Chicago, Ill.
Girard Bell & Mfg. Co., Girard, O.
Keeler, A. Co., Williamsport, Pa.
Petroleum Iron Works Co., Washington, Pa.
Pipe. (Sever and Culvert.)
Georgia Vitreous Brick & Clay Co., Augusta, Ga.
Kriegshaber, V. H., Atlanta, Ga.
Maryland Lime & Cement Co., Balto., Md.
Pomona Terra Cotta Co., Pomona, N. J.
Stevens' Sons Co., H., Macon, Ga.
Talladay Steel Pipe & Tank Co., Waterloo, Ia.
Warner Co., Chas., Wilmington, Del.
Pipe. (Sheet Steel.)
Dixie Mfg. Co., Baltimore, Md.
Talladay Steel Pipe & Tank Co., Waterloo, Ia.
Pipe. (Spiral Riveted.)
American Spiral Pipe Works, Chicago, Ill.
Pipe. (Wrought Iron.)
Bourne-Fuller Co., Cleveland, O.
Columbia Supply Co., Columbia, S. C.
General Fire Extinguisher Co., Providence, R. I.
Simmons, John, Co., New York, N. Y.
Pipe Cutting and Threading Mach.
Reed Mfg. Co., Erie, Pa.
Saunders' Sons, D., Yonkers, N. Y.
Pipe Fittings.
Columbia Supply Co., Columbia, S. C.
General Fire Extinguisher Co., Providence, R. I.
Robertson Mfg. Co., James, Baltimore, Md.
Simmons, John, Co., New York, N. Y.
Wolf Co., Fred. W., Chicago, Ill.
Pipe Flanges. (Welded Steel.)
Latrobe Steel Co., Philadelphia, Pa.
Pipe Unions and Joints.
Dart Mfg. Co., E. M., Providence, R. I.
Planers. (Metal.)
Baird Mch. Co., Pittsburg, Pa.
Bailey-Lobby Co., Charleston, S. C.
Price, S. M., Machinery Co., Norfolk, Va.
Savannah Locomotive & Car Works, Savannah, Ga.
Walke, Henry, Co., Norfolk, Va.
Plaster Ornament.
French, Samuel H., & Co., Philadelphia, Pa.
Plating. (Nickel.)
Hanson & Van Winkle Co., Newark, N. J.
Plumbers' Supplies and Tools.
Reed Mfg. Co., Erie, Pa.
Robertson Mfg. Co., James, Baltimore, Md.
Simmons, John, Co., New York, N. Y.
Portable Tools. (For Railway Repair Shops.)
Underwood, H. B., & Co., Philadelphia, Pa.
Power Transmitting Machinery.
Brown, A. & F., Co., New York, N. Y.
Caldwell, H. W., & Son Co., Chicago, Ill.
Case Mfg. Co., Columbus, O.
Crescent Co., Geo. V., New York, N. Y.
Fairmount Machine Co., Philadelphia, Pa.
Kenney Pulley Co., Toledo, O.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Engineering Co., Philadelphia, Pa.
Muster Machine Co., Milner, O.
Northern Electric Mfg. Co., Madison, Wis.
Nurdyke & Marmon Co., Indianapolis, Ind.
Wood's T. B., Sons, Chambersburg, Pa.
Presses. (Rolling, Cottonseed Oil, etc., Hydraulic and Power.)
Boomer & Boschert Press Co., Syracuse, N. Y.
Bushnell Press Co., G. H., Thompsonville, Conn.
Cardwell Machine Co., Richmond, Va.
Gibbs, W. H., & Co., Columbia, S. C.

Tompkins, D. A., Co., Charlotte, N. C.
Walk & Murdoch Iron Works, Charleston, S. C.
Watson-Sullivan Co., New York, N. Y.
Presses. (Stamping.)
Lodder, Chas., & Co., Brooklyn, N. Y.
Niagara Machine & Tool Works, Buffalo, N. Y.
Publishers.
Audel, Theo., & Co., New York, N. Y.
Middletown, J. W., & Co., Chicago, Ill.
Pulleys. (Friction Clutch.)
Blakeslee Mfg. Co., Birmingham, Ala.
Brown, A. & F., Co., New York, N. Y.
Crescent Co., Geo. V., New York, N. Y.
Fairmount Machine Co., Philadelphia, Pa.
Smith, S. Morgan, Co., York, Pa.
Williams, M. F., Mfg. Co., St. Louis, Mo.
Wood's T. B., Sons, Chambersburg, Pa.
Pulleys. (Pneumatic.)
Williams, M. F., Mfg. Co., St. Louis, Mo.
Pulleys. (Wood Split.)
Caldwell, H. W., & Son Co., Chicago, Ill.
Caldwell, W. E., Co., Louisville, Ky.
Chase Pulley Co., Providence, R. I.
Federal Mfg. Co., Milwaukee, Wis.
Kenney Pulley Co., Toledo, O.
Lane Mfg. Co., Montpelier, Vt.
Onolis Steel Pulley Co., Onolis, N. Y.
Price, S. M., Machinery Co., Norfolk, Va.
Savannah Locomotive & Car Works, Savannah, Ga.
Smith, H. E., Machine Co., Smithville, N. J.
Pulleys. (Steel Split.)
American Pulley Co., Philadelphia, Pa.
Federal Mfg. Co., Milwaukee, Wis.
Onolis Steel Pulley Co., Onolis, N. Y.
Pulleys, Shafts and Hangers.
Brown, A. & F., Co., New York, N. Y.
Caldwell, H. W., & Son Co., Chicago, Ill.
Case Mfg. Co., Columbus, O.
Crescent Co., Geo. V., New York, N. Y.
Davis Foundry & Machine Works, Rome, Ga.
Fairmount Machine Co., Philadelphia, Pa.
Pay, J. A., & Egan Co., Cincinnati, O.
Federal Mfg. Co., Milwaukee, Wis.
Gairville Iron Works, Gairville, Ga.
Golden's Foundry & Machine Co., Columbus, Ga.
Greenwald Co., I. & E., Cincinnati, O.
Jeffrey Mfg. Co., The, Columbus, O.
Kenney Pulley Co., Toledo, O.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Engineering Co., Philadelphia, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
Maryland Foundry & Machine Co., Baltimore, Md.
Minister Machine Co., Milner, O.
Nurdyke & Marmon Co., Indianapolis, Ind.
Price, S. M., Machinery Co., Norfolk, Va.
Scholfield, J. S., & Son Co., Macon, Ga.
Smith, H. E., Machine Co., Smithville, N. J.
Tompkins, D. A., Co., Charlotte, N. C.
Valley Iron Works, Williamsport, Pa.
Wolf Co., Chambersburg, Pa.
Wood's T. B., Sons, Chambersburg, Pa.
Pumps. (Hot Air.)
American Machine Co., Wilmington, Del.
Pumps. (Centrifugal.)
Erie Pump & Engine Co., Erie, Pa.
Soutawark Foundry & Machine Co., Philadelphia, Pa.
Wood & Co., B. D., Philadelphia, Pa.
Pumps. (Hand.)
Plant & Walling Mfg. Co., Kendallville, Ind.
Pumps. (Hydraulic.)
American Steam Pump Co., Battle Creek, Mich.
Cardwell Machine Co., Richmond, Va.
Niagara Hydraulic Engine Co., Chester, Pa.
Watson-Sullivan Co., New York, N. Y.
Pumps. (Pneumatic.)
Bacon Air Lift Co., New York, N. Y.
Consolidated Air Lift Co., Washington, D. C.
Ingersoll Sergeant Drill Co., New York, N. Y.
Pumps. (Power Boiler-Feed.)
Cameron Steam Pump Works, A. & S., New York, N. Y.
McGowan Co., John H., Cincinnati, O.
Park Mfg. Co., Charlotte, N. C.
Worthington, Henry E., New York, N. Y.
Pumps. (Steam.)
Alberger Condenser Co., New York, N. Y.
American Steam Pump Co., Battle Creek, Mich.
Cameron Steam Pump Works, A. & S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Cook Well Co., St. Louis, Mo.
Downie Pump Co., Downsville, Pa.
Gibbs, W. H., & Co., Columbia, S. C.
McGowan, John H., & Co., Cincinnati, O.
Murray Iron Works, Burlington, Iowa.
Price, S. M., Machinery Co., Norfolk, Va.
Pulmoner Steam Pump Co., New York, N. Y.
Savannah Locomotive & Car Works, Savannah, Ga.
Scranton Steam Pump Co., Scranton, Pa.
Stillwell-Bierce & Smith-Valle Co., Dayton, O.
Worthington, Henry E., New York, N. Y.
Pumps. (Trench.)
Edson Manufacturing Co., Boston, Mass.
Pumping Machinery.
American Steam Pump Co., Battle Creek, Mich.
Bacon Air Lift Co., New York, N. Y.
Cameron, A. & S., Steam Pump Works, New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Downie Pump Co., Downsville, Pa.
Erie Pump & Engine Co., Erie, Pa.
Myers, F. E., & Bro., Ashland, O.
Stillwell-Bierce & Smith-Valle Co., Dayton, O.
Walke, Henry, Co., Norfolk, Va.
Wood, B. D., & Co., Philadelphia, Pa.
Worthington, Henry E., New York, N. Y.
Punching and Shearing Machinery.
Berch & Co., Cambridge City, Ind.
Niagara Machine & Tool Works, Buffalo, N. Y.
Robinson, J. M., Mfg. Co., Cincinnati, O.
Rorysford Foundry & Machine Co., Rorysford, Pa.
Wood, B. D., & Co., Philadelphia, Pa.
Quarrying and Stonecutting Mch.
Ingersoll-Sergeant Drill Co., New York, N. Y.
Jeffrey Mfg. Co., The, St. Louis, Mo.
Rand Drill Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.
Rack Locomotives. (See Locomotive Riders.)
Railroad Equipment and Supplies.
(New and Second-hand.)
Alabama Frog & Switch Co., Anniston, Ala.
American Frog & Switch Co., Hamilton, O.
American Locomotive Co., New York, N. Y.
Bailey-Lobby Co., The, Charleston, S. C.
Bourne-Fuller Co., Cleveland, O.
Birmingham Rail & Locomotive Co., Birmingham, Ala.
Bowen & Street Equipment Co., Norfolk, Va.
Clark & Hines, Baltimore, Md.
Continental Equipment Co., New York, N. Y.
Contractors Equipment Co., Philadelphia, Pa.
Cox, Jr., Justice, & Co., Ltd., Philadelphia, Pa.
Davis & Bryan, Philadelphia, Pa.
Elkhart Frog & Crossing Works, Elkhart, Ind.
Fitz-Hugh-Luther Co., Chicago, Ill.
Harper Machinery Co., New York, N. Y.
Hartfelder-Garbutt Co., Savannah, Ga.
Hixson, H. A., Solvay, Philadelphia, Pa.
Hyde Bros. & Co., Pittsburg, Pa.
Johnson, Chas. F., Buffalo, N. Y.
Joseph Iron Co., Isaac, Cincinnati, O.
Kilby Locomotive & Machine Works, Anniston, Ala.
Loppel, Arthur, New York, N. Y.
Low, Edgar E., Co., Pittsburg, Pa.
Macleary, J. H., & Co., Suffolk, Va.
Malles Co., Cincinnati, O.
May & Spalding, Atlanta, Ga.
New York Equipment Co., New York, N. Y.
Porter, H. E., Co., Pittsburg, Pa.
Poulter & Co., Philadelphia, Pa.
Robinson & Orr, Pittsburg, Pa.
Sabel Bros., Jacksonville, Fla.
Savannah Locomotive & Supply Co., Savannah, Ga.
Smith-Courtney Co., Richmond, Va.
Steel Rail Supply Co., The, New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Watson, Benj., New York, N. Y.
Weir Frog Co., Cincinnati, O.

BALDWIN LOCOMOTIVE WORKS,

Single Expansion and Compound Locomotives.



BROAD AND NARROW GAUGE LOCOMOTIVES, Mine and Furnace Locomotives, Compressed Air Locomotives, Tramway Locomotives, Plantation Locomotives, Oil Burning Locomotives.
ELECTRIC LOCOMOTIVES WITH WESTINGHOUSE MOTORS, ELECTRIC CAR TRUCKS WITH OR WITHOUT MOTORS.
All important parts made accurately to gauges and templates, after standard design or to railroad companies' drawings. Like parts of different locomotives of same class, perfectly interchangeable.
Cable Address: **BALDWIN, PHILADELPHIA.** **BURNHAM, WILLIAMS & CO., Philadelphia, Pa., U. S. A.**

STEEL BALLS

Something more than a micrometer is needed to distinguish good balls from bad ones.



The test of quality lies in service. The best balls are known as "High Duty." We make them.

FEDERAL MANUFACTURING COMPANY
CLEVELAND BALL FACTORY—Cleveland

BRASS FOUNDERS FINISHERS J. J. RYAN & CO.

68-74 West Monroe St., Chicago.

Best Bronze, Babbitt Metals, Brass and Aluminum CASTINGS on Short Notice.

THE AMERICAN FROG & SWITCH CO., Hamilton, O.
FROGS, SWITCHES, SWITCH STANDS, RAIL BRACES.

LATROBE STEEL COMPANY.

1200 Girard Bldg., Philadelphia, Pa. Works at Latrobe, Pa.

STEEL TIRES (Locomotive and Car Wheel),
PIPE FLANGES,
CRUSHER RINGS and SHELLS.

BOOK OF DESIGNS

OF PLAIN AND INLAID

HARDWOOD FLOORS

is yours for the asking. Then, if you will send measures of rooms, an estimate, either on flooring or floors laid and finished, will be sent promptly.

The work is made in several thicknesses adapted for use in new or old houses.

Many references can be given showing the thoroughness of our work in our particular field—Baltimore, Washington, Richmond and the SOUTH.

J. M. ADAMS,

227 N. CHARLES STREET, BALTIMORE, MD.

Westinghouse Motors

Alternating Current
Circular 1050



Direct Current
Circular 1042

Wherever installed, increase the capacity of a plant and improve the quality of the product.

Westinghouse Electric & Mfg. Co.

Sales Offices in all Large Cities.

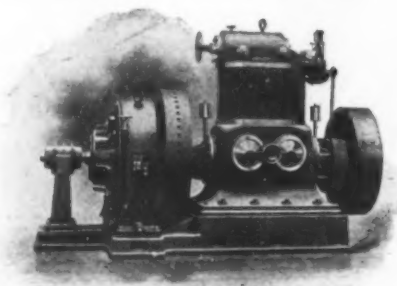
Pittsburg, Pa.



Westinghouse Induction Motors Driving Tools in Large Machine Shop

Westinghouse Compound Engines

35 H. P. to 450 H. P.



Westinghouse Compound Engine Generating Set.

The duty tests given each engine before shipment, can be relied upon as a true indication of future performance.

For particulars address nearest sales office of
The Westinghouse Machine Co.
Works: East Pittsburg, Pa.

SALES OFFICES: New York, 10 Bridge Street.
Boston, 131 State St. Chicago, 171 La Salle St.
Pittsburg, Westinghouse Bldg. Detroit, Union Trust Bldg.
Designers and Builders of
Steam Engines, Gas Engines, Steam Turbines, Reciprocating Mechanical Stokers.

Westinghouse

Motor Driven Air Compressor

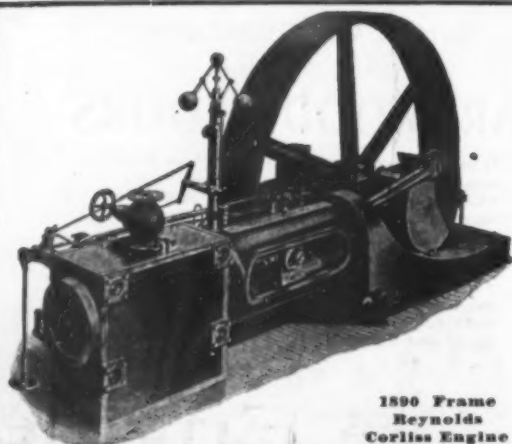


Specially adaptable to furnishing compressed air for portable blowing outfits; the latter are furnished in three sizes, with or without truck and storage tanks, and with or without water jacket.

Westinghouse Traction
Brake Co., 26 Cortlandt St., New York.

Power Brakes for Traction Service.
Combined Magnetic Brake and Electric Car Heater.
Axle and Motor Driven Air Compressors.

Apparatus Manufactured by The Westinghouse Air Brake Co.



1890 Frame
Reynolds
Corliss Engine

ALLIS-CHALMERS COMPANY,

General Office, CHICAGO, New York Life Bldg.

SOLE BUILDERS OF

Reynolds Corliss Engines

FOR ALL POWER PURPOSES.

ENGINES ESPECIALLY ADAPTED FOR

COTTON MILLS and COTTON OIL MILLS.

BRANCH
OFFICES

NEW YORK, Empire Building.
BOSTON, Board of Trade Building.
PITTSBURG, 1212 Frick Building.

CHARLOTTE, N. C., Trust Building.
ATLANTA, GA., Equitable Building.

Classified Index of Articles Advertised

For ALPHABETICAL
INDEX See Page 32.

Western Supply & Mfg. Co., East St. Louis, Ill.
Woham-Magor Engine Works, New York, N. Y.
Zelicker, W. A., Supply Co., St. Louis, Mo.
Railroad Frogs and Switches.
Alabama Frog & Switch Co., Anniston, Ala.
American Frog & Switch Co., Hamilton, N. Y.
Elkhart Frog & Crossing Works, Elkhart, Ind.
Koppel, Arthur, New York City.
May & Spalding, Atlanta, Ga.
Weir Frog Co., Cincinnati, O.
Woham-Magor Eng. Works, New York, N. Y.
Zelicker, W. A., Supply Co., St. Louis, Mo.
Rails. (Steel.)
Bourne-Fuller Co., Cleveland, O.
Carey, George H., New York, N. Y.
Clark & Hines, Baltimore, Md.
Continental Equipment Co., New York, N. Y.
Continental Iron & Steel Co., New York, N. Y.
Davis, O. W., New York, N. Y.
Franks, J. E., Savannah, Ga.
Hamel, John J., & Co., Pittsburg, Pa.
Hittner's, H. A., Sons, Philadelphia, Pa.
Johnson, Chas. F., Buffalo, N. Y.
Koppel, Arthur, New York, N. Y.
Levin, Henry & Co., Philadelphia, Pa.
Macleary, J. H., & Co., Suffolk, Va.
Maiter Co., Cincinnati, O.
Maryland Rail Co., Cumberland Wd.
Moore, Edgar M., & Co., Pittsburg, Pa.
Riccardone & Co., Inc., Pittsburg, Pa.
Robinson & Orr, Pittsburg, Pa.
Rutter, C. H., Easton, Pa.
Schonthal Iron & Steel Co., Cumberland Wd.
Simpers, Thos. W., & Co., Philadelphia, Pa.
Steel Rail Supply Co., The New York, N. Y.
Union Rail Co., Pittsburg, Pa.
Western Supply & Mfg. Co., East St. Louis, Ill.
Woham-Magor Eng. Works, New York, N. Y.
Zelicker, W. A., Supply Co., St. Louis, Mo.
Steamers.
Morris Twist Drill & Machine Co., New Bedford, Mass.
Fratt & Whitney Co., Hartford, Conn.
Polk, A. J., & Son, Millersburg, Pa.
Regulators. (Water and Steam Pressure.)
Crosby Steam Gauge & Valve Co., Boston, Mass.
Refrigerators. (Engine and Pump.)
Underwood, H. B., & Co., Philadelphia, Pa.
Refrigerators. (MILL, STEAMSHIP AND LOCOMOTIVE.)
Alabama Iron Works, Mobile, Ala.
Riveters. (Pneumatic.)
Rand Drill Co., New York, N. Y.
Road Machinery.
Acme Road Machinery Co., Frankfort, N. Y.
Kelly-Springfield Road Roller Co., Springfield, O.
Kilbourne & Jacobs Mfg. Co., Columbus, O.
Rock Crushers.
Austin Mfg. Co., Chicago, Ill.
Cresson, Geo. V., Co., New York, N. Y.
Kent Mill Co., New York, N. Y.
N. J. Foundry & Machine Co., New York, N. Y.
Roofers and Tinners' Supplies.
Chattanooga Roof & Fdry. Co., Chattanooga, Tenn.
Niagara Machine & Tool Works, Buffalo, N. Y.
Merchant & Co., Inc., Philadelphia, Pa.
Robinson, J. M. Mfg. Co., Cincinnati, O.
Roofing Tin. (SEE TIN ROOFING.)
Roofing. (Flat, Tar, Asphalt, Paper, etc.)
American Roofing Co., Mobile, Ala.
American Tinplate Co., Pittsburg, Pa.
Armstrong Mfg. Co., The Richmond, Va.
Asphalt Ready Roofing Co., New York, N. Y.
Barrett Mfg. Co., Philadelphia, Pa.
Buchanan-Foster Co., Philadelphia, Pa.
Bird, F. W., & Co., East Walpole, Mass.
Bird, J. A., & W. & Co., Boston, Mass.
Carey, Philip, Mfg. Co., Lockland, O.
Chattanooga Roof & Fdry. Co., Chattanooga, Tenn.
Eastern Granite Roofing Co., New York, N. Y.
Garrett, C. S., & Son, Co., Philadelphia, Pa.
Maryland Lime & Cement Co., Balto., Md.
Miller Oil & Supply Co., Indianapolis, Ind.
National Roofing & Supply Co., Louisville, Ky.
Scott & Co., Cincinnati, O.
Standard Paint Co., New York, N. Y.
Stowell Mfg. Co., Jersey City, N. J.
Warren Chemical & Mfg. Co., New York, N. Y.
Wulf, W. C., & Co., Louisville, Ky.
Zelicker, W. A., Supply Co., St. Louis, Mo.
Roofing. (Metal Shingles.)
Chattanooga Roof & Fdry. Co., Chattanooga, Tenn.
Corrigan Metal Roofing Co., Philadelphia, Pa.
Merchant & Co., Inc., Philadelphia, Pa.
Montross Metal Shingle Co., Camden, N. J.
Penn Metal Ceiling & Roofing Co., Phila., Pa.
Roofing. (Slate.)
Downman-Doxier Mfg. Co., Atlanta, Ga.
Galt, John, & Son, New York, N. Y.
Genuine Bangor Slate Co., Easton, Pa.
McKenna, David, Stratford, Pa.
Roofing and Siding. (Metal.)
Corrigan Metal Roofing Co., Philadelphia, Pa.
Downman-Doxier Mfg. Co., Atlanta, Ga.
Easton Foundry & Machine Co., Easton, Pa.
Merchant & Co., Inc., Philadelphia, Pa.
Passaic Steel Co., Paterson, N. J.
Scaife, Wm. B., & Sons Co., Pittsburg, Pa.
Simpers, Thos. W., & Co., Philadelphia, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
Rope. (Transmission.)
American Mfg. Co., The New York, N. Y.
Broderick & Bacon Rope Co., St. Louis, Mo.
Caldwell, W. E., & Co., Louisville, Ky.
Columbian Cordage Co., Auburn, N. Y.
Cresson Co., Geo. V., New York, N. Y.
Durable Wire Rope Co., Boston, Mass.
Ironclad Co., Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Wood's Sons, T. B., Chambersburg, Pa.
Rubber Goods.
Boston Belting Co., Boston, Mass.
Eureka Fire Hose Co., New York, N. Y.
New Jersey Car Spring & Rubber Co., Jersey City, N. J.
Pennsylvania Rubber Co., New York, N. Y.
Voorhees Rubber Mfg. Co., Jersey City, N. J.
Sacks. (Fertilizer.)
Bailey, John T., & Co., Philadelphia, Pa.
Safety Water Columns and Gauges.
Amer. Sim. Gauge & Valve Mfg. Co., Jam. Plain, Mass.
Crosby Steam Gauge & Valve Co., Boston, Mass.
Lunkelheimer Co., Cincinnati, O.
Bellance Gauge Column Co., Cleveland, O.
Safes and Vaults.
York Safe & Lock Co., York, Pa.
Shed, Door and Blind Factories.
Montgomery Lumber Mfg. Co., Montgomery, Ala.
Saws. (Band.)
Atkins, E. C., & Co., Indianapolis, Ind.
Pay, J. A., & Egan Co., Cincinnati, O.
Smith, H. B., Machine Co., Smithville, N. J.
Saw Gummer.
Miller Oil & Supply Co., Indianapolis, Ind.
Saws. (See Woodworking Machinery.)
Atkins, E. C., & Co., Indianapolis, Ind.
Gibbes, W. H., & Co., Columbia, S. C.
Huther Bros., Rochester, N. Y.
Miller Oil & Supply Co., Indianapolis, Ind.
Smith, H. B., Machine Co., Smithville, N. J.
Saw Mills.
Montgomery Lumber Mfg. Co., Montgomery, Ala.
Red Cypress Lumber Co., Macon, Ga.
Rietson Lumber Co., Macon, Ga.
Wilkins, Van S., Lumber Co., Mobile, Ala.
Saw-Mill Machinery.
Bailey-Lebby Co., The Charleston, S. C.
Beach, H. W., Montross, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chattanooga Machinery Co., Chattanooga, Tenn.
Columbia Supply Co., Columbia, S. C.
DeLoach Mill Mfg. Co., Atlanta, Ga.
Farquhar Co., E. Ltd., York, Pa.
Pay, J. A., & Egan Co., Cincinnati, O.
Frick Co., Waynesboro, Pa.
Gibbes, W. H., & Co., Columbia, S. C.
Hartfelder-Garbutt Co., Savannah, Ga.
Hench & Dromgold Co., York, Pa.

Hill, Wm. E., & Co., Kalamazoo, Mich.
Lane Mfg. Co., Montpelier, Vt.
Macklenburg Iron Works, Charlotte, N. C.
Schofield's, J. S., Sons Co., Macon, Ga.
Smith, H. B., Machine Co., Smithville, N. J.
Soule Steam Feed Works, Meridian, Miss.
Southern Eng. & Boiler Works, Jackson, Tenn.
Stratton & Bragg Co., Petersburg, Va.
Union Iron Works Co., Selma, Ala.
Zelicker, W. A., Supply Co., St. Louis, Mo.
Saw Sharpeners and Files. (Cutting Gils.)
Carver Cotton Gin Co., East Bridgewater, Mass.
Scales.
McDonald Bros., Pleasant Hill, Mo.
Osgood Scale Co., Binghamton, N. Y.
Richardson Scale Co., New York, N. Y.
Standard Scale & Supply Co., Ltd., Pittsburg, Pa.
Scales. (Automatic.)
Richardson Scale Co., New York, N. Y.
Scrap Iron and Steel.
May & Spalding, Atlanta, Ga.
Cohen-Schwartz Rail & Steel Co., St. Louis, Mo.
Screens. (Fly, Window and Door.)
Burrows, E. T., Co., Portland, Me.
New Jersey Wire Cloth Co., Trenton, N. J.
Screens. (Ora, Coze, etc.)
Althaus, E., Perfected Metal Co., Chicago, Ill.
Beckley, A. J., Co., Garwood, N. J.
Cresson Co., Geo. V., New York, N. Y.
Harrington & King Perforating Co., Chicago, Ill.
Hendrick Mfg. Co., Ltd., Carbondale, Pa.
Jeffrey Mfg. Co., The Columbus, O.
Ludlow-Saylor Wire Co., The St. Louis, Mo.
New Jersey Wire Cloth Co., Trenton, N. J.
Neyers Mfg. Co., Fred. J., Hamilton, O.
Munde & Sons, Charles, New York, N. Y.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Screw Pitches.
Polk, A. J., & Son, Millersburg, Pa.
Screw Saws. (See Woodworking Machinery.)
Pay, J. A., & Egan Co., Cincinnati, O.
Smith, H. B., Machine Co., Smithville, N. J.
Seals. (Stock Certificates, etc.)
Milderton, J. W., & Co., Chicago, Ill.
Seal Works. Richmond, Va.
Separators. (Dust.)
Allington & Curtis Mfg. Co., Saginaw, Mich.
Cincinnati Exhaust & Blow Pipe Co., Cincinnati, O.
Dixie Mfg. Co., Baltimore, Md.
Hartford Blower Corp., Hartford, Conn.
Sturtevant Co., B. F., Boston, Mass.
Separators. (Steam and Oil.)
Bates Machine Co., Joliet, Ill.
Scranton Steam Pump Co., Scranton, Pa.
Webster & Co., Warren, Philadelphia, Pa.
Shapers.
Bailey-Lebby Co., Charleston, S. C.
Baird Mch. Co., Pittsburg, Pa.
Price, S. M., Machinery Co., Norfolk, Va.
Walke, Henry Co., Norfolk, Va.
Sharpening Stones.
Pike Mfg. Co., Pike Station, N. H.
Vittrified Wheel Co., Westfield, Mass.
Sheet Steel and Iron.
Bourne-Fuller Co., Cleveland, O.
Globe Rolling Mill, Cincinnati, O.
Passaic Steel Co., Paterson, N. J.
Simpers, Thos. W., & Co., Philadelphia, Pa.
Shingles. (Metal.)
Chattanooga Roof & Fdry. Co., Chattanooga, Tenn.
Corrigan Metal Roofing Co., Philadelphia, Pa.
Merchant & Co., Inc., Philadelphia, Pa.
Montross Metal Shingle Co., Camden, N. J.
Penn Metal Ceiling & Roofing Co., Phila., Pa.
Ship Builders. (Iron and Steel.)
Baltimore Shipbuilding & Dry Dock Co., Balto., Md.
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.
Shutters. (Steel Rolling.)
Kinney Mfg. Co., Columbus, O.
Sky Lights.
Chattanooga Roof & Fdry. Co., Chattanooga, Tenn.
Downman-Doxier Mfg. Co., Atlanta, Ga.
Merchant & Co., Inc., Philadelphia, Pa.
Van Noorden, K. Co., Boston, Mass.
Wulf, W. C., & Co., Louisville, Ky.
Slate. (Roofing.)
Galt, John, & Son, New York, N. Y.
Genuine Bangor Slate Co., Easton, Pa.
McKenna, David, Stratford, Pa.
Slaters' Tools.
Galt, John, & Son, New York, N. Y.
Smoke Stacks. (Iron and Steel.)
Girard Boiler & Mfg. Co., Girard, O.
Keeler, E. Co., Williamsport, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
Petroleum Iron Works Co., Washington, Pa.
Schofield's, J. S., Sons Co., Macon, Ga.
Solder.
Hertz, Thos. Metal Co., St. Louis, Mo.
Ryan, J. J., & Co., Chicago, Ill.
Speaking Tubes.
Electrical Material Co., Baltimore, Md.
Spelter.
Hertz, Thos. Metal Co., St. Louis, Mo.
Spikes.
The Diamond State Steel Co., Wilmington, Del.
Springs. (Bicycle Saddle, Machinery, Railway and Spiral.)
Boston Belting Co., Boston, Mass.
Cary Spring Works, New York, N. Y.
Ludlow-Saylor Wire Co., The St. Louis, Mo.
Sprinklers. (Automatic.)
Bailey-Lebby Co., Charleston, S. C.
General Fire Extinguisher Co., Providence, R. I.
Stamp Mills.
Gainesville Iron Works, Gainesville, Ga.
Macklenburg Iron Works, Charlotte, N. C.
Stamps. (BRASS, RUBBER.)
Hullet, John G., & Co., Baltimore, Md.
National Seal Works, Richmond, Va.
Standpipes.
Girard Boiler & Mfg. Co., Girard, O.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E. Williamsport, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
Means & Fulton Iron Work, Birmingham, Ala.
Petroleum Iron Works Co., Washington, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
Steam Fitters' Supplies.
General Fire Extinguisher Co., Providence, R. I.
McWilliams, Jon., & Co., Louisville, Ky.
Reed Mfg. Co., Erie, Pa.
Simmons, John, Co., New York City.
Steam Gages.
American Steam Gauge & Valve Mfg. Co., Jamaica Plain, Mass.
Crosby St. Gauge & Valve Co., Boston, Mass.
Lunkelheimer Co., Cincinnati, O.
Steam Heating.
General Fire Extinguisher Co., Providence, R. I.
Keeler, E. Co., Williamsport, Pa.
Peck-Hammond Co., The Charleston, S. C.
Tompkins, D. A., Co., Charlotte, N. C.
Webster & Co., Warren, Camden, N. J.
Steam Shovels. (See Dredge and Excavators.)
Steam Traps.
American Blower Co., Detroit, Mich.
Haines, W. S., Co., Phila., Pa.
Sturtevant Co., B. F., Boston, Mass.
Steamship Lines.
Baltimore Steam Packet Co., Baltimore, Md.
Chesapeake Steamship Co., Baltimore, Md.
Merchaus & Miners' Trans. Co., Baltimore, Md.
Steel. (Manufacturers of.)
American Sheet Steel Co., New York, N. Y.
Bourne-Fuller Co., Cleveland, O.
Chester Steel Castings Co., Philadelphia, Pa.
Globe Rolling Mill, Cincinnati, O.
Kennedy, Walter, Pittsburg, Pa.
Passaic Steel Co., Paterson, N. J.
The Diamond State Steel Co., Wilmington, Del.
Steel Buildings. (Designers, Builders.)
Easton Foundry & Machine Co., Easton, Pa.
Frick & Hesse, Baltimore, Md.



"ABC"
Fans and Blowers
for all uses
AMERICAN BLOWER CO
DETROIT, MICH.
NEW YORK CHICAGO LONDON

PHOENIX IRON WORKS CO.

MEADVILLE PA.

ENGINES AND BOILERS



For Direct Connection

TO DYNAMO, OUR

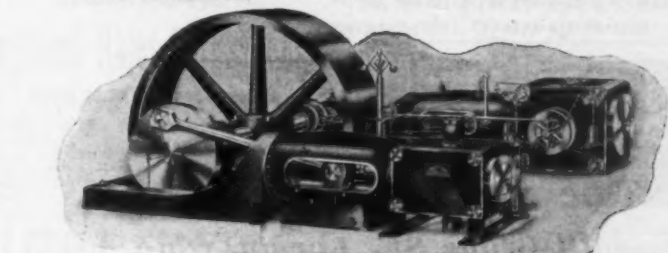
Eight Vertical Automatic Engines

have no superior. We have just brought out a line of direct connected sets which we know will interest you. Let us send you our Catalogue "N" and quote you prices. Both will surprise you.

WM. E. HILL & CO.

North Park Street, KALAMAZOO, MICH.

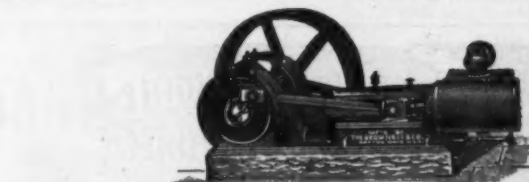
HARDIE-TYNES MFG. CO.



Box 406,

Manufacturers,

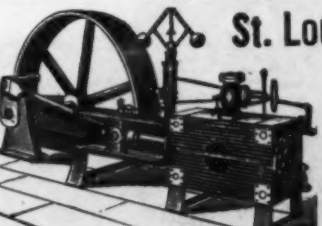
BIRMINGHAM, ALA.



This space is limited and the subject of our Boilers, Engines, Tanks and Heaters is large. Send for Catalogue 13.

THE BROWNELL & CO., DAYTON, OHIO.

THE GREENSBORO SUPPLY CO., Greensboro, N. C., Selling Agents for North and South Carolina and Northern Georgia.



SEND FOR OUR NEW CATALOGUE.

St. Louis Iron & Machine Works,

100 Chouteau St., ST. LOUIS, MO.

BUILDERS OF

St. Louis Corliss Engine

50 to 2000 H. P.

Brick Machinery.

Harrisburg Foundry & Machine Works, Engines

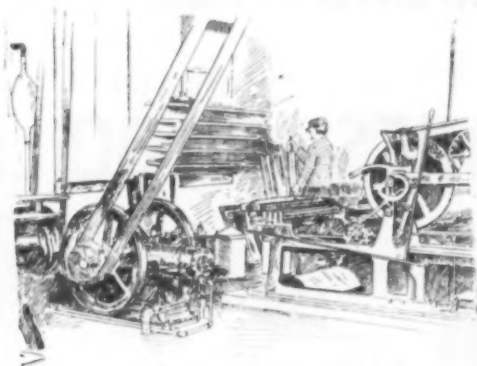
HARRISBURG, PA., U. S. A.



SOUTHWARK FOUNDRY AND MACHINE COMPANY

FOUNDED 1836
PHILADELPHIA, PA.

SOLE MAKERS OF THE
PORTER-ALLEN STEAM ENGINE
SINGLE, COMPOUND & TRIPLE.
REVERSING ENGINES,
BESSEMER & BLAST FURNACE BLOWING ENGINES
WEISS COUNTER-CURRENT CONDENSERS.



Gas Engine Power

starts your machinery instantly when wanted, without coal shoveling or engineer's wages and at very small expense, and stops the moment you stop your machinery.

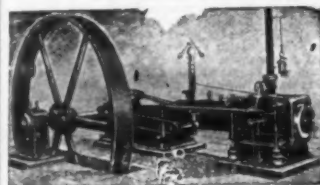
The Brown Gas Engines are made in all sizes up to 50 horse power.

The Brown-Cochran Co.

14 Globe St., Lorain, Ohio.



SOUTHERN ENGINE & BOILER WORKS, JACKSON, TENN.



—Builders of—

Corliss Engines,

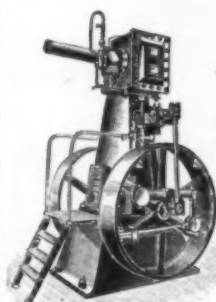
Slide-Valve Engines, Tubular Boilers and Saw-Mill Machinery.



The WILLIAM TOD Co.

Engine Builders

YOUNGSTOWN, OHIO.



Shepherd Steam Engines

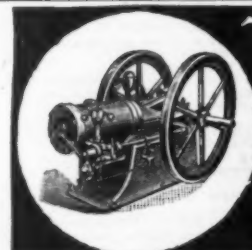
For All Service.

SINGLE EXPANSION
AND COMPOUND.

Shepherd Engineering Co.

Box M.

FRANKLIN, PA., U. S. A.

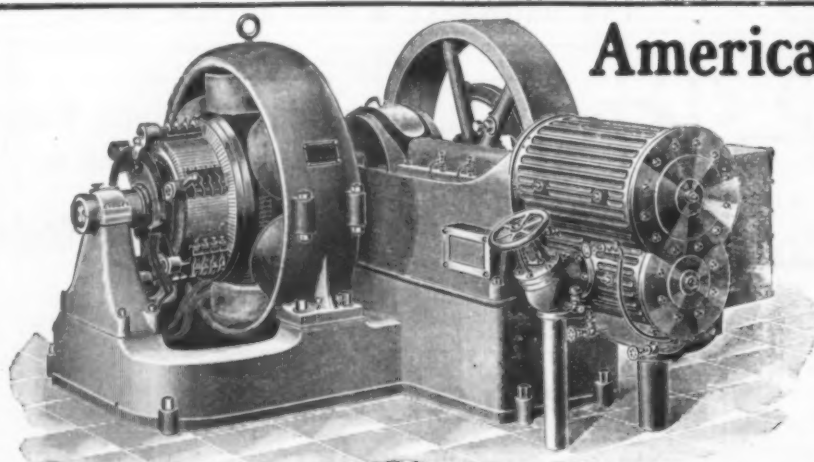


THE "BLAKESLEE" AND GASOLINE ENGINE
STANDS SUPREME
LET US TELL YOU WHY
BLAKESLEE MFG. CO. BIRMINGHAM, ALA.

UNION IRON WORKS COMPANY,
SELMA, ALA., U. S. A.

Manufacturers of

Engines, Boilers, Live Rolls and Logging Cars.
LOCOMOTIVE REBUILDING A SPECIALTY.



American-Ball **DUPLEX** COMPOUND Engine and Direct Connected Generator

SAVES 25%

American engines lead in the markets of the world, and the American-Ball Duplex Compound Engine is at the head.

It is a marvel of simplicity, requires no more floor space than the simple engine, and it **SAVES 25 PER CENT OF THE FUEL**, without a condenser.

We furnish complete plants, consisting of engines, generators and motors all of our own manufacture.

AMERICAN ENGINE CO.

New York Office: 95 Liberty Street.

A. St.C. Dunstan, Southern Agent, Auburn, Ala.

60 Raritan Ave., BOUND BROOK, N. J.


Classified Index of Articles Advertised

FOR ALPHABETICAL
INDEX See Page 32

General Supply & Construction Co., New York, N. Y.
 Pacific Steel Co., Paterson, N. J.
 Scaff. Wm. B. & Sons Co., Pittsburg, Pa.
 Schreiber, L. & Sons Co., Cincinnati, O.
 Va. Bridge & Iron Co., Roanoke, Va.
Nickel Compens. (Automatic.)
 Latrobe Steel & Coupler Co., Philadelphia, Pa.
Stencils.
 Hullet, John G. & Co., Baltimore, Md.
Stills. (Turpentine.)
 McMillan Bros. Co., Mobile, Ala.
Stock Cordier, Bonds and Seals.
 Hullet, John G. & Co., Baltimore, Md.
 Middleton, J. W. & Co., Chicago, Ill.
 Myers Printing House, New Orleans, La.
 National Seal Works, Richmond, Va.
Stockers. (Mechanical.)
 Westinghouse, Church, Kerr & Co., Pittsburg, Pa.
 Westinghouse Machine Co., Pittsburg, Pa.
Storage Receipts.
 Baltimore Fidelity Warehouse Co., Baltimore, Md.
Structural Steel and Iron.
 Belmont Iron Works, Philadelphia, Pa.
 Bourne-Fuller Co., Cleveland, O.
 Chesapeake Iron Works, Baltimore, Md.
 Easton Foundry & Machine Co., Easton, Pa.
 Kansas Supply Co., Chattanooga, Tenn.
 General Supply & Construction Co., New York, N. Y.
 Girard Boiler & Mfg. Co., Girard, O.
 Globe Rolling Mill, Cincinnati, O.
 Moore, Edgar M. & Co., Pittsburg, Pa.
 Pacific Steel Co., Paterson, N. J.
 Scaff. Wm. B. & Sons Co., Pittsburg, Pa.
 Schreiber, L. & Sons Co., The Cincinnati, O.
 Simpkins, Thos. W. & Co., Philadelphia, Pa.
 Virginia Bridge & Iron Co., Roanoke, Va.
Switchboards, Switches, etc.
 Electrical Material Co., Baltimore, Md.
 Standard Electric Co., Norfolk, Va.
 Wesco Supply Co., St. Louis, Mo.
 Westinghouse Electric & Mfg. Co., Pittsburg, Pa.
Tanks. (Iron and Steel.)
 Caldwell, W. E. & Co., Louisville, Ky.
 Flint & Walling Mfg. Co., Kendallville, Ind.
 Girard Boiler & Mfg. Co., Girard, O.
 Hammond Iron Works, Warren, Pa.
 Harry Bros. Co., Dallas, Tex.
 Harley Boiler Works, Montgomery, Ala.
 Keeler Co., E. Williamsport, Pa.
 Lombard Iron Works & Supply Co., Augusta, Ga.
 Means & Fulton Iron Works, Birmingham, Ala.
 Petroleum Iron Works Co., Washington, Pa.
 Scaff. W. E. & Sons Co., Pittsburg, Pa.
 Schofield, J. S. & Sons Co., Macon, Ga.
 Smith Co., S. Morgan, York, Pa.
 Tallard Steel Pipe & Tank Co., Waterloo, Ia.
 Tompkins, D. A. & Co., Charlotte, N. C.
 York & Murdoch Iron Works, Charleston, S. C.
 Virginia Bridge & Iron Co., Roanoke, Va.
 Vogt, Henry, Machine Co., Louisville, Ky.
 Wood, R. D. & Co., Phila., Pa.
Tanks. (Wood.)
 Caldwell, W. E. & Co., Louisville, Ky.
 Cypress Lumber Co., Apalachicola, Fla.
 Davis, G. M. & Son, Palatka, Fla.
 Lewis, H. F. & Co., Ltd., New Orleans, La.
 Tupelo Tank Co., Mobile, Ala.
Tapes. (Measuring.)
 Lufkin Rule Co., Saginaw, Mich.
Telephone Brackets.
 Benbow Co., The, Philadelphia, Pa.
Telephones. (supplies, equipment.)
 Alexander, Jr. Co., S. E., Charlotte, N. C.
 Electric Supply Co., Savannah, Ga.
 Electrical Material Co., Baltimore, Md.
 Piedmont Electric Co., Asheville, N. C.
 Standard Electric Co., Norfolk, Va.
 Wesco Supply Co., St. Louis, Mo.
Telephone Poles.
 Electrical Material Co., Baltimore, Md.
 Houston & Liggett, Louisville, Tenn.
 International Erecting & Const. Co., Galveston, Tex.
Terne Plate.
 Mechanical & Co., Philadelphia, Pa.
 Simpkins, Thos. W. & Co., Philadelphia, Pa.
Terra cotta.
 Kriegerhaber, V. H. & Co., Atlanta, Ga.
 Roman Terra Cotta Co., Roanoke, N. C.
 Stevens, H. & Sons Co., Macon, Ga.
Textile Machinery. (See Cotton Mill Mach.)
Threshers.
 Farouhar, A. B. & Co., York, Pa.
 Cardwell Machine Co., Richmond, Va.
 Gibbs, W. H. & Co., Columbia, S. C.
Tin. (Roofing.)
 American Tinplate Co., New York, N. Y.
Tinplate.
 American Tinplate Co., New York, N. Y.
 Merchant & Co., Inc., Philadelphia, Pa.
 Simpkins, Thos. W. & Co., Philadelphia, Pa.
Tires. (Locomotive and Car.)
 Globe Rolling Mill, Cincinnati, O.
 Latrobe Steel Co., Philadelphia, Pa.
Tobacco Machinery.
 Buckeye Iron & Brass Works, Dayton, O.
 Cardwell Machine Co., Richmond, Va.
Tools. (Machine.) (See Machine Tools.)
Tools. (Mechanists.)
 Barnes, W. F. & John Co., Rockford, Ill.
 Morse Twist Drill & Machine Co., New Bedford, Mass.
 Polk, A. J. & Son, Millersburg, Pa.
 Pratt & Whitney Co., Hartford, Conn.
Tools. (Pneumatic.)
 Rand Drill Co., New York, N. Y.
Tools. (Tinners.)
 Niagara Machine & Tool Works, Buffalo, N. Y.
Tools. (For Rwy. Rep. Shops.) (See Port. Tools.)
Torches.
 Grim Mfg. Co., Pittsburg, Pa.
 Wall, F. Mfg. Co., Allegheny, Pa.
Towers. (Steel and Wood.)
 Caldwell, W. E. & Co., Louisville, Ky.
 Flint & Walling Mfg. Co., Kendallville, Ind.
 Tompkins, D. A. & Co., Charlotte, N. C.
Towing Machines. (AUTO, STEAM.)
 American Ship Windlass Co., Providence, R. I.
Tramway. (Overhead.)
 Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.
 Moyer, J. W. & Co., Philadelphia, Pa.
 New Jersey Fdy. & Mch. Co., New York, N. Y.
 Speidel, J. G., Reading, Pa.
Tramway. (Wire Rope.)
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Caldwell, H. W. & Sons Co., Chicago, Ill.
 Cresson Co., George V., New York, N. Y.
 Flory, S. Mfg. Co., Bangor, Pa.
 Jeffrey Mfg. Co., Columbus, O.
 Lidgerwood Mfg. Co., New York, N. Y.
 Link-Belt Engineering Co., Nicetown (Phila.), Pa.
 McLanahan-Stone Machine Co., Hollidaysburg, Pa.
 Trenton Iron Co., Trenton, N. J.
Trucks and Drays. (Hand.)
 Horner, W. P. Mfg. Co., Danville, Va.
Tube Cleaners.
 Gem Mfg. Co., Pittsburg, Pa.
Tubing.
 Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Tubing. (Seamless, Brass, Copper & Brased.)
 Waterbury Brass Co., New York, N. Y.
Turbines. (See Water Wheels.)
Turbines. (Steam.)
 Westinghouse, Church, Kerr & Co., Pittsburg, Pa.
 Westinghouse Machine Co., Pittsburg, Pa.
Turntables.
 Koppel, Arthur, New York City.
 Niles Co., Cincinnati, O.
 Pacific Steel Co., Paterson, N. J.
 Virginia Bridge & Iron Co., Roanoke, Va.
Typewriter Table Cabinets.
 Dearborn Desk Co., Birmingham, Ala.
Valves.
 Amer. Stm. Gauge & Valve Mfg. Co., Jam. Plain, Mass.
 Boston Bellows Co., Boston, Mass.
 Columbia Supply Co., Columbia, S. C.

Crosby Steam Gauge & Valve Co., Boston, Mass.
 General Fire Extinguisher Co., Providence, R. I.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 Jenkins Bros., New York, N. Y.
 Ludlow Valve Mfg. Co., Troy, N. Y.
 Lunkenheimer Co., Cincinnati, O.
 Munroe John, Co., New York City.
 Vorhees Rubber Mfg. Co., Jersey City, N. J.
 Wolf, Fred, W. & Co., Chicago, Ill.
 Wood, R. D. & Co., Philadelphia, Pa.
Veneer.
 Burton Veneer Co., Montgomery, Ala.
Veneer Machines.
 Cos Mfg. Co., The, Painesville, O.
 Titus, E. E., Petersburg, Va.
Ventilators.
 Dowman-Doster Mfg. Co., Atlanta, Ga.
 Merchant & Co., Inc., Philadelphia, Pa.
 Wulff, W. C. & Co., Louisville, Ky.
Vices.
 Reed Mfg. Co., Erie, Pa.
Wagon Builders' Mch. & Supplies.
 Cordeman, Meyer & Co., Cincinnati, O.
 Fay, J. A. & Egan Co., Cincinnati, O.
Washers. (Ore and Phosphate.)
 Bailey-Lobby Co., The, Charleston, S. C.
 Cameron & Barker Co., Charleston, S. C.
 McLanahan-Stone Co., Hollidaysburg, Pa.
Warehouse. (Fidelity.)
 Baltimore Fidelity Warehouse Co., Baltimore, Md.
Wichman's Clinks.
 Electrical Material Co., Baltimore, Md.
 Imhauser & Co., E. New York City.
 Nans & Co., New York, N. Y.
 Waggoner Watchman Clock Co., Grand Rapids, Mich.
Water Power.
 Roanoke Navigation & Water Power Co., Weldon, N. C.
Waterproof Cellar Engineer.
 Gilbreth, Frank B., Boston, Mass.
Water-Wheel Governor.
 Reologie Governor Works, Akron, O.
Water and Apparatus (Purifying.)
 Scaff. Wm. B. & Sons Co., Pittsburg, Pa.
Water-Wheels and Turbines.
 Davis Foundry & Machine Works, Rome, Ga.
 Lane Mfg. Co., Montpelier, Vt.
 Ledell, James & Co., Springfield, O.
 Munson Bros. Co., Utica, N. Y.
 Norrish, Burnham & Co., Inc., Glen Rock, Pa.
 Radon-Alcott Turbine Co., Mount Holly, N. J.
 Smith Co., S. Morgan, York, Pa.
 Stillwell-Bierce Smith-Valley Co., Dayton, O.
 Westinghouse, Church, Kerr & Co., Pittsburg, Pa.
 Westinghouse Mch. Co., Pittsburg, Pa.
 Wolf Co., Chambersburg, Pa.
Water Meters.
 Pittsburg Meter Co., E. Pittsburg, Pa.
 Worthington, Henry E., New York, N. Y.
Water-Works Supplies.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 Pomona Terra Cotta Co., Pomona, N. C.
 Stevens, H. & Sons Co., Macon, Ga.
 U. S. Cast Iron Pipe & Foundry Co., Chicago, Ill.
 Wood, R. D. & Co., Philadelphia, Pa.
Weighing Machinery. (Automatic.)
 Richardson Scale Co., New York, N. Y.
 Well Contractors (Oil, Artesian, etc.)
 Andrews, Perry & Bro., Atlanta, Ga.
 Bacon Air Lift Co., New York, N. Y.
 Cook Well Co., St. Louis, Mo.
 Ford, Isaac H., New York, N. Y.
 Hughes Specialty Well Drilling Co., Charleston, S. C.
Well Tools and Supplies.
 Andrews, Perry & Bro., Atlanta, Ga.
 Bacon Air Lift Co., New York, N. Y.
 Cook Well Co., The, St. Louis, Mo.
 Ford, Isaac H., New York, N. Y.
 Hughes Specialty Well Drilling Co., Charleston, S. C.
 Kelly & Tanehill Co., Waterloo, Ia.
 Williams Bros., Ithaca, N. Y.
Wheelbarrows and Trucks.
 Jackson Mfg. Co., Harrisburg, Pa.
 Kilbourne & Jacobs Mfg. Co., Columbus, O.
Whistles. (Chimes, Bells, etc.)
 Amer. Stm. Gauge & Valve Mfg. Co., Jam. Plain, Mass.
 Crosby Steam Gauge & Valve Co., Boston, Mass.
 Lunkenheimer Co., Cincinnati, O.
White Lead.
 French, Samuel H. & Co., Philadelphia, Pa.
Windlasses. (STEAM, ELECTRIC & HAND.)
 American Ship Windlass Co., Providence, R. I.
Windmills.
 Flint & Walling Mfg. Co., Kendallville, Ind.
Window Frames. (FIREPROOF.)
 Wulff, W. C. & Co., Louisville, Ky.
Window Guards. (Wire.) (See Wire Goods.)
Wire. (Barbed Wire, etc.)
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Ludlow-Saylor Wire Co., The, St. Louis, Mo.
 Roebing's, J. A. & Sons Co., Trenton, N. J.
Wire. (Brass and Copper.)
 Waterbury Brass Co., New York, N. Y.
Wire Cloth. (Iron, Steel, Brass, etc.)
 Buffalo Wire Works Co., Buffalo, N. Y.
 Caldwell, H. W. & Sons Co., Chicago, Ill.
 Meyers, Fred, J., Hamilton, O.
 New Jersey Wire Cloth Co., Trenton, N. J.
Wire Goods.
 Bolles Iron & Wire Works, J. E., Detroit, Mich.
 Buffalo Wire Works Co., Buffalo, N. Y.
 Duff & Co., Baltimore, Md.
 Eureka Supply Co., Chattanooga, Tenn.
 Ludlow-Saylor Wire Co., The, St. Louis, Mo.
 Meyers Mfg. Co., The, Fred J., Hamilton, O.
 New Jersey Wire Cloth Co., Trenton, N. J.
Wire Netting.
 Buffalo Wire Works Co., Buffalo, N. Y.
 New Jersey Wire Cloth Co., Trenton, N. J.
Wire Rope.
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Contractions Plant Co., New York, N. Y.
 Durable Wire Rope Co., Boston, Mass.
 Hazard Mfg. Co., Wilkes Barre, Pa.
 Lidgerwood Mfg. Co., New York, N. Y.
 Roebing's John A. & Sons Co., Trenton, N. J.
 Trenton Iron Co., Trenton, N. J.
Wire Rope Filler.
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Ironsides Co., Columbus, O.
Wire Rope Shields.
 Ironsides Co., Columbus, O.
Wire Rope Thimbles.
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Jackson Mfg. Co., Harrisburg, Pa.
Woodworking Machines. (Pneumatic.)
 Rand Drill Co., New York, N. Y.
Wood Distilleries.
 Standard Turpentine Co., New York, N. Y.
Woodsplitting Machines.
 Fay, J. A. & Egan Co., Cincinnati, O.
Woodworking Machinery.
 Chattanooga Machine Co., Chattanooga, Tenn.
 Cos Mfg. Co., The, Painesville, O.
 De Loach Mill Mfg. Co., Atlanta, Ga.
 Fay, J. A. & Egan Co., Cincinnati, O.
 Gibbs, W. H. & Co., Columbia, S. C.
 Hermance Mch. Co., Williamsport, Pa.
 Huther Bros., Rochester, N. Y.
 Lane Mfg. Co., Montpelier, Vt.
 Miller Oil & Supply Co., Indianapolis, Ind.
 Moehannon Mfg. Co., Phillipsburg, Pa.
 Ober Mfg. Co., Unadilla Falls, O.
 Root, B. M., York, Pa.
 Shimer, Samuel J. & Sons, Milton, Pa.
 Smith-Courtney Co., Richmond, Va.
 Smith, H. B. Machine Co., Smithville, N. J.
 Stratton & Bragg Co., Petersburg, Va.
 Walke, Henry, York, Pa.
 Whitney, B. D. & Son, Winchester, Mass.
Yellow Metal. (Sheet and Rod.)
 Waterbury Brass Co., New York, N. Y.
Zinc.
 Merchants & Co., Inc., Philadelphia, Pa.
 New Jersey Zinc Co., New York, N. Y.

Horizontal and Vertical, Simple and Compound



Engines

of superior quality for electric light and power.

The Ball Engine Co., Erie, Penn.



Corliss, Slide Valve & Hoisting Engines,
 BOILERS OF ALL STYLES AND SIZES.

THE MURRAY IRON WORKS CO.
 BURLINGTON, IOWA.
 Incorporated February 1, 1870.

ATLAS

Engines and Boilers

Simple, Strong, Durable and Economical.

Standard Types and Sizes.

Atlas Engine Works.
Indianapolis.

Dept. M.

SMITH-COURTNEY CO.
 Richmond, Va.

SOUTHERN AGENTS FOR THE

Improved Bates Corliss Engine

FROM 50 TO 1000 HORSE-POWER

THE ENGINE for Cotton Mills and Large Factories.
 Also full line of Engines, Boilers, Iron and Woodworking Machinery and Pumps. Largest stock of Railroad, Mine and Mill Supplies in the South.

"LITTLE GIANT" STEAM OUTFITS

will make you happy. Sizes 1/4 to 10 h. p. In use all years. Simple, durable and powerful. Send for circular and price list.

BALTIMORE ENGINE CO.
 227 1/2 N. Calvert St., Baltimore.

BOILERS AND ENGINES.

Tanks, Stacks, Stand Pipes and Sheet Iron Work; Shafting, Pulleys, Gearing, Boxes, Hangers, etc. Mill Castings.
 *Cast every day; work 120 hands.

Lombard Iron Works & Supply Co.
 AUGUSTA, GEORGIA.

THE C. & G. COOPER CO.

BUILDERS OF


HIGH GRADE

Cooper-Corliss
ENGINES.Complete Steam Plants
a Specialty.

Home Office and Works, MT. VERNON, O.

Branch Offices:

ATLANTA, 8 Austell Bldg.
 CHARLOTTE, O. A. Robbins.
 NEW YORK, 1022 Havemeyer Bldg.
 BOSTON, 411 Weld Bldg.
 CHICAGO, 1436 Monadnock Block.



We have the most complete, closely regulated, efficient, durable and economical engine that experience, good workmanship, time, money and the correct principle can furnish. The working parts are few, but the right kind and in the right place. Our catalogue No. 17 will tell you all about it.

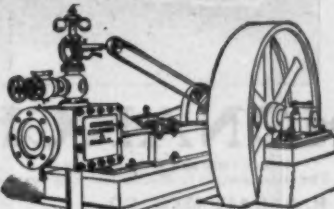
WRITE US.

Capital Gas Engine Company,
 Pike and Hovey Sts.
 INDIANAPOLIS, IND.

America's Standard Slide Valve Engine.

Capital Gas Engine Company,
 Pike and Hovey Sts.
 INDIANAPOLIS, IND.

America's Standard Slide Valve Engine.



BUILT BY
THE HOUSTON, STANWOOD & GAMBLE CO.
 Cincinnati, O.

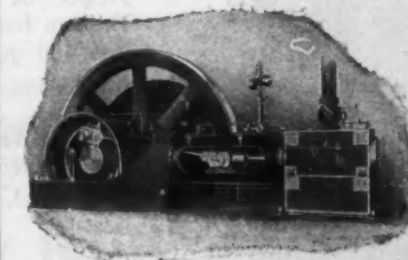
Cold Punched Nuts!

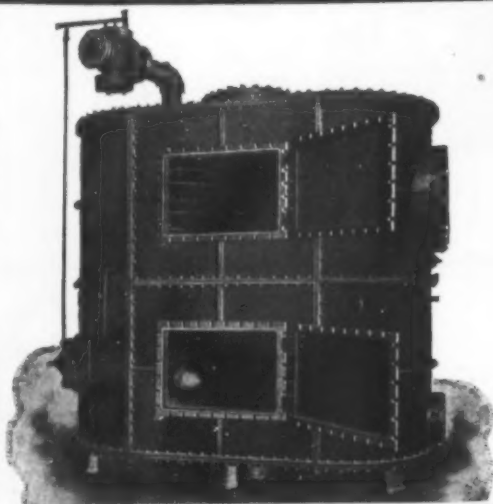
We want your trade in Cold Punched Nuts—Plain, Chamfered, Trimmed and Reamed, Finished and Semi-Finished. They are made of Double Refined Bar Iron, true to size and well finished. It will pay you to get our prices.

The Milton Mfg. Co., Milton, Pa.

Gas and Gasoline Engines
COLUMBUS

Send for CATALOGUE G.
COLUMBUS MACHINE CO.
 Columbus, Ohio.





Stilwell's Feed-Water Heater.

This appliance is productive of the greatest possible economy in a steam plant. By its use you can heat six pounds of cold water with one pound of exhaust steam from an initial temperature of say 50° F. right up to the boiling point (or more than nine pounds from 100° F.), and for every 10° thus gained you will save 1% of all the coal used under your boilers; that is, taking water at 50° the saving will be at least 16%, and more likely 19%.

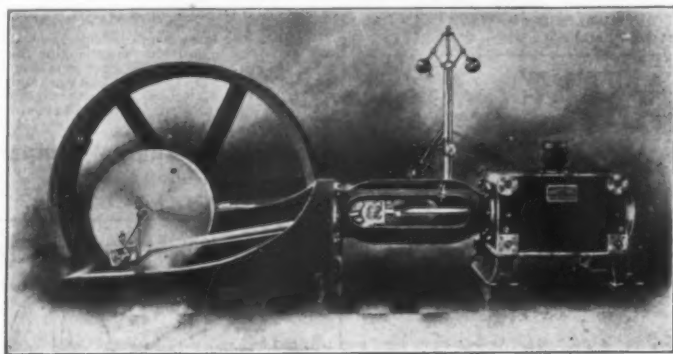
THE STILWELL HEATER

has other advantages—water economy, improved quality of feed supply, increased steaming capacity, decreased wear and tear on boilers, etc.

For further information, address

THE STILWELL-BIERCE & SMITH-VAILE CO.

M-40-403 to 425 Keowee St., DAYTON, OHIO, U. S. A.



MONARCH CORLISS

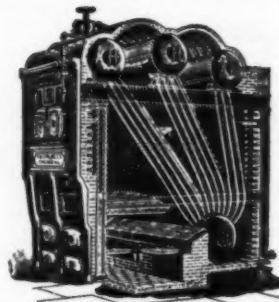
Heavy Duty and Girdler Frame.
The latest designs in Mechanical Engineering.
H. N. STRAIT MFG. CO.

QUICK DELIVERIES.

Adams Street, Kansas City.

THE STIRLING BOILER

Four manhole plates, all of which can be removed in a few minutes, give access to the entire interior, and expose every tube, rivet and joint in the boiler.

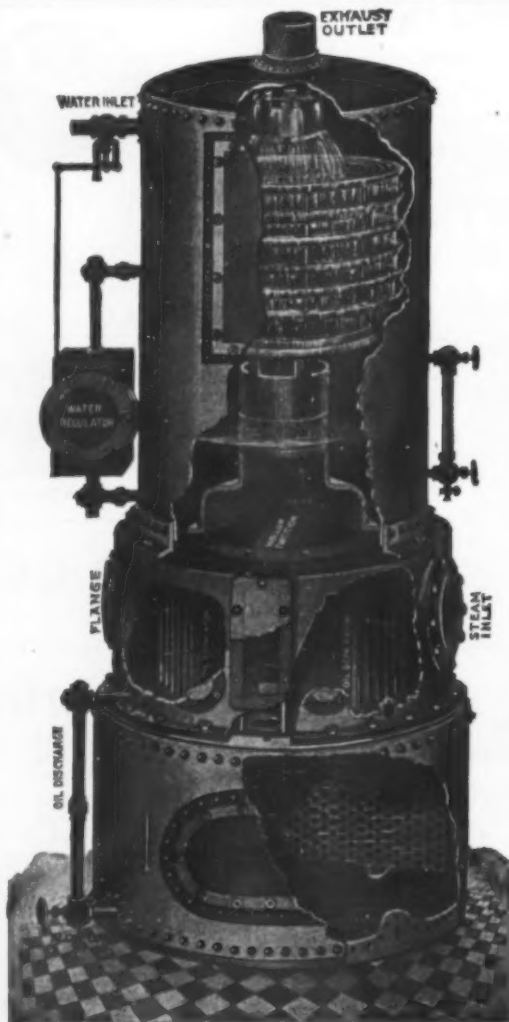


Its design is the acme of simplicity, and is mechanically perfect. Every pressure part is circular or spherical in form, and is made of wrought metal. *Not one ounce of cast iron or cast steel.*

THE STIRLING COMPANY,

General Offices, Pullman Building,
CHICAGO.

ATLANTA,
Empire Building.



SOLD ON ITS MERITS.

The Cookson Combination Feed Water Heater, Purifier, Filter and Oil Separator.

Maintains constant temperature of the feed water of 206° to 212°.

Heats more water with less steam than any other.

Thoroughly Purifies and Filters the water, passing it to your boilers Pure and Boiling Hot.

The only Heater made separating the oil from the exhaust steam on entering the heater from either exhaust opening; one an oil separator and the other a steam separator, and operating by the steam passing through it in either direction.

Large Filtering Capacity—twice that of the ordinary Heater.

Special Designed Lime Catching Pans. Abundant lime catching surface.

Heater constructed of Best Materials throughout. Finest grade Fittings.

Heaters of all sizes from 50 to 10,000 H. P.

Built in four styles, A, B, C, and D.

You will get "*value received*" for every dollar invested in a "Cookson," besides having the best Heater, Purifier, Filter and Oil Separator that can be devised.

If you have exceptionally bad water to contend with, write us.

Our Heater Expert will give you the benefit of his experience.

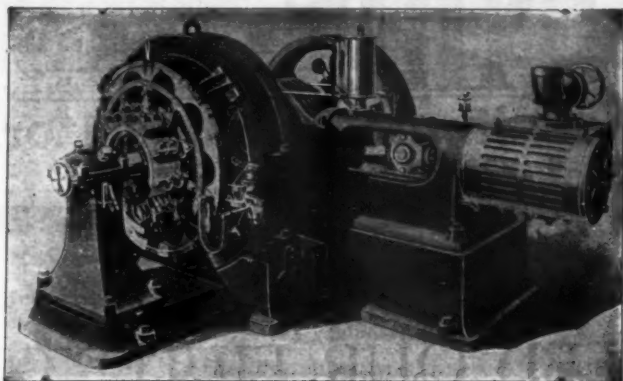
Send for Complete Illustrated Catalog.

BATES MACHINE CO., Joliet, Ill., U. S. A.

SOLE MANUFACTURERS.

LUDWIG & CO., Agents, Atlanta, Ga.

SMITH-COURTNEY CO., Agents, Richmond, Va.



RIDGWAY Thompson-Ryan Patents. **Dynamos** and **Engines,** McEwen Patents.

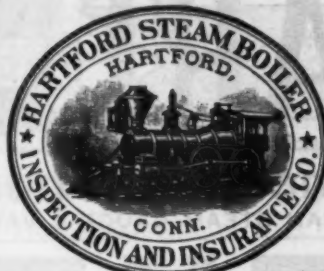
THE STANDARD FOR LIGHT,
RAILWAY AND POWER.

ILLUSTRATED CATALOGUE ON APPLICATION.

RIDGWAY DYNAMO & ENGINE CO.,

RIDGWAY, PA.

85-89 Liberty St., New York. Exchange Bldg., Boston. Caxton Bldg., Buffalo.
Girard Bldg., Philadelphia. Wm. Sharpe, 184 La Salle St., Chicago.
Great Western Mfg. Co., 1231-1233 Union Ave., Kansas City, Mo.



Thorough Inspections

And Insurance against Loss or Damage
to Property, and Loss of Life and
Injury to Persons caused by

Steam Boiler Explosions.

J. M. ALLEN, President.
WM. B. FRANKLIN, Vice-President.
F. B. ALLEN, 2d Vice-President.
J. B. PIERCE, Secretary.
L. B. BRAINERD, Treasurer.
L. F. MIDDLEBROOK, Asst Sec'y.

Insure Your Steam Boilers

WITH THE

Maryland Casualty Co.

OF BALTIMORE.

Inspections made promptly, regularly and thor-
oughly by experienced men of proved ability.
Agents throughout the United States.

Surplus and Reserve for Policyholders
over \$2,250,000.00.

JOHN T. STONE, President.



OIL and LABOR SAVER
IRONSIDES
IMPROVED

Tormay PAT. Oiler

For Mine-Car Wheels and
General Purposes.

The Ironsides Company,
COLUMBUS, OHIO, U. S. A.

Good Seller for Supply Houses.

The National Feed Water Heaters

Save Fuel,
Save Money,
Save Time
AND
Save Your
Boilers

Delivering Water
to the Boiler at
212° F.



Full amount of heating
surface in every
heater.

We Manufacture
all kinds of

COILS

OF

Iron, Brass and
Copper Pipe.

Write for
Catalogue.

The National Pipe
Bending Co.

97 Lloyd Street,

New Haven, Conn.

THE BABCOCK & WILCOX Co.

85 LIBERTY ST.
NEW YORK
CABLE ADDRESS
NEW YORK
"GLOBEBOXES"
ALL FOREIGN OFFICES
"BABCOCK"



WATER TUBE

BOILERS

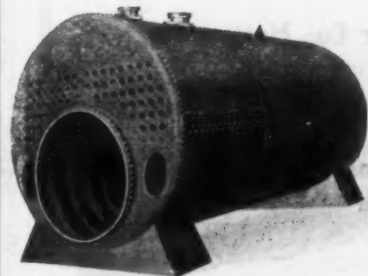
SEND FOR OUR BOOK "STEAM"

BOSTON 35 FEDERAL ST. PHILADELPHIA 100 N. 3RD ST. CHICAGO 135 MARQUETTE BLDG. SAN FRANCISCO 32 FIRST ST. BRANCH OFFICES NEW ORLEANS 135 CANON ST. ST. LOUIS 135 N. 3RD ST. ATLANTA, GA. 217 EQUABLE BLDG. INDIANAPOLIS 135 N. 3RD ST. CLEVELAND 135 N. 3RD ST. PITTSBURGH 135 N. 3RD ST. HAVANA, CUBA 217 CALLE DE LA MAYANA

BOILERS

With Rivet Holes Drilled after Plates are Bent and in Position. Tanks and Sheet Iron Works
Engines, Cotton Gins and Presses. Machinery for Fertilizer Works and Phosphate Washers, Ashes
tos Magnesia Pipe Covering and Magnesia Cement Felting for Boilers, Domes, Steam Piping, etc.

VALK & MURDOCH IRON WORKS, Charleston, S. C.

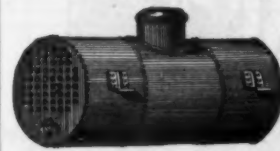


Internal Furnace Boiler.

Economical in first cost, space, fuel and
maintenance.
Portable and self contained.
Burns lowest grades of fuel.
Readily accessible for cleaning.
No masonry setting.
No cast-iron fronts or castings.

Designed for any pressure—Absolutely safe.
SEND FOR CATALOG R.

E. KEELER CO., Williamsport, Pa.



HARTLEY'S BOILER WORKS,
Boilers, Stand Pipes, Tanks,
Smoke Stacks, etc., etc. **MONTGOMERY, ALA.**

Soot from the Flues of Boilers.

Every boiler-owner knows the necessity of removing the soot from the flue. We unhesitatingly commend our
GEM FLUE SCRAPER to the trade as approaching perfection, as a scraper never did before.
It is made of good tempered steel. The cutting edges are self-sharpening. It is economical and fulfills the
end for which it is manufactured.

GEM MFG. CO.,

Pittsburg, Pa.



Engines, Boilers, Saw Mills, Presses.

Write to

GENERAL MANUFACTURERS OF

MECKLENBURG IRON WORKS, Charlotte, N. C.

MACHINERY

MANUFACTURED ONLY BY
E.M. DART MFG CO
PROVIDENCE R.I.
THE FAIRBANKS CO.

DART UNION

THE BEST UNION COUPLING
MADE IN THE WORLD.
NO RUSTON EITHER SIDE.
Sales Agents.

Specify The American Thompson Improved Indicator.
AMERICAN STEAM GAUGE & VALVE MFG. CO., BOSTON, MASS.



CAPILAR OIL FILTER

IF YOU USE OIL YOU NEED OUR FILTER.

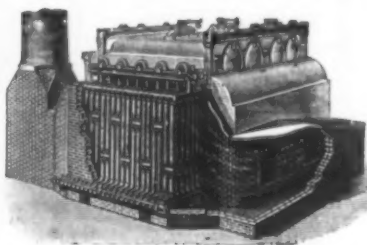
Our **CAPILAR OIL FILTER** is based upon the principle of capillary action, the oil passing upward through a series of wicks, leaving the foreign matter behind. It is impossible for dirt to pass the wicks. About 90 per cent. of the oil used on your machinery is recoverable, and as a filter is requisite to the frugal operation of your plant, why not use the best—THE CAPILAR?

Write for Booklet J4.

The Capilar Co., 136 South Fourth St., Philadelphia.

Worrying over current expenses unnecessary when a

Green's Economizer



Is in the boiler room. Using waste gases entirely, it keeps the feed-water heated above the boiling point. What that means in boiler repair saving can possibly be best learned from the engineer. Saves in coal 10 to 20 per cent. Other savings explained in our free booklet.

The Green Fuel Economizer Co., Matteawan, N. Y.

SOLE MANUFACTURERS IN THE U. S. A.

RAWSON & MORRISON MFG. CO.

CAMBRIDGEPORT, BOSTON, MASS.

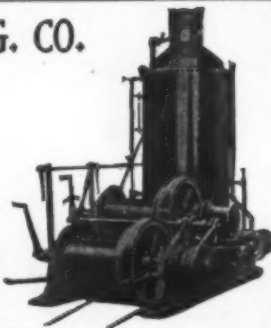
Standard and Eastern

HOISTING ENGINES,

CABLEWAYS and AUTOMATIC COAL
HANDLING MACHINERY.

NEW YORK OFFICE,
No. 11 Broadway.
BALTIMORE,
707 Maryland Trust Bldg.

CHICAGO,
48-50 Lake St.
MONTREAL, CAN.
WRITE FOR CATALOGUE C.



IMPROVED BERRYMAN Water Tube

FEED WATER HEATER AND PURIFIER.

Its **PERFECT CIRCULATION** of the water gives the highest degree of heat obtainable with the use of exhaust steam.

Provided with **N SHAPED SEAMLESS DRAWN BRASS TUBES** and so constructed that it **CANNOT LEAK** under the highest boiler pressure it is possible to carry.

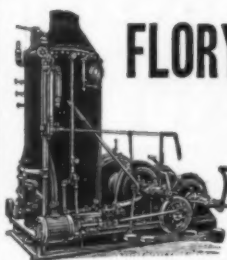
Built compactly and designed with special reference to meeting the requirements of modern plants, and give continuous efficient service under the most severe conditions.

We also make special heaters for all purposes, for heating oils, acids and other liquids. If you need anything out of the ordinary, our experience is at your command.



BENJ. F. KELLEY & SON, Manufacturers, 91 Liberty St., N. Y. Works, Brooklyn, N. Y.

FLORY Hoisting Engines



Specially adapted for Contractors, Pile Driving Quarry and Mine Duty.

Cableways and Conveying Machinery a specialty.

Slate Mining and Working Machinery—a complete line.

S. FLORY MFG. CO.,

Bangor, Pa

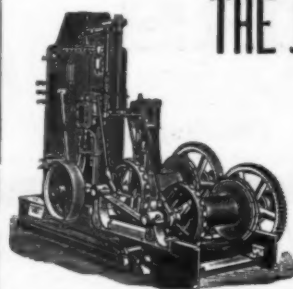
THE JOHN F. BYERS MACHINE CO.

RAVENNA, OHIO.

Manufacturers of

Hoisting Engines, Locomotives,
Derrick Cars, Derrick
Irons, Etc.

Write for Catalogue "G."



Lidgerwood HOISTING ENGINES

OVER:
21,000
IN USE.

Are **STANDARD** for Building Purposes,
Pile Driving, Excavating, etc.

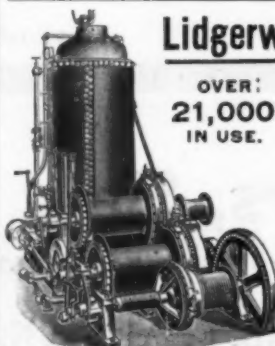
CABLEWAYS,

HOISTING and CONVEYING DEVICES, for
Mining, Quarrying, Steam Logging.

SEND FOR CATALOGUES.

Lidgerwood Mfg. Co.

96 LIBERTY ST. NEW YORK.



Chicago, Atlanta, Cleveland, Boston, Philadelphia, New Orleans, Portland, Ore, Pittsburg.

LUNKENHEIMER

A MECHANICAL OIL PUMP to be a success should embody the following principles: It should be simple, practical, well made, durable, reliable, absolutely positive, and devoid of clap-net mechanism. The **Lunkenheimer Mechanical Oil Pump** possesses all the above features. It touches the spot and puts the oil where it is needed. Every pump rigidly tested, inspected and warranted to satisfy. Specify "Lunkenheimer" make and order from your dealer. Write for catalog of brass and iron Valves, Injectors, Whistles, Lubricators, Steam Traps, Oil and Grease Cups, etc., all of superior quality.

THE LUNKENHEIMER CO.
SOLE MANUFACTURERS

Branches: New York, 24 Cortlandt St. London, 25 Great Dover St. CINCINNATI, O. U.S.A.

MECHANICAL OIL PUMP

Contractor's Plant Mfg. Co., Ltd.

MANUFACTURERS OF

STEAM, HORSE and HAND POWER

Hoisting Machines

DERRICK IRON and CONTRACTORS' SUPPLIES.

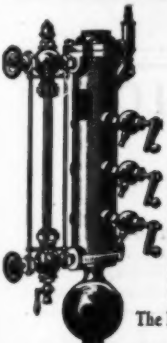
MANUFACTURERS OF WIRE ROPE.

129 Erie Street, Buffalo, N. Y.

Mention this Journal.



RELIANCE



Safety Water Columns

Save
Fuel, Repairs, Stoppages.
ECONOMY.
SAFETY.

We urge our patrons
to see that the name
"Reliance" is cast on
all columns. No other
person or corporation
is authorized to manu-
facture Reliance Steam
Specialties.

The Reliance Gauge Column Co.

SOLE MFRS.

CLEVELAND, O.

79 E. Prospect St.

THE HENRY WALKER CO.

NORFOLK, VA.

Erie City Iron Works Engine and Boilers,

Lodge and Shipley Lathes, Bickford
Radial Drills, Cincinnati Shapers, Cin-
cinnati Planers, Cincinnati Machine
Tools, Vertical Drills, Cincinnati Milling
Machines. Also High-class Wood-
Working Machinery, Pumping Machi-
nery, Pneumatic Machinery.

Rear King Bolt Brewster Gear Set No. 8 A.

INTEGRAL HEAD BLOCK PLATE.



The finest Rear King Bolt
Gear Set ever produced. The
strongest of selling points for
your line of vehicles. Fur-
nished all wrought or with mal-
leable parts. All made to fit
regular gear woods. No spe-
cial woods required. Guar-
anteed not to rattle.

Write for prices and ask for Catalogue F.



THE D. WILCOX MANUFACTURING CO. - Mechanicsburg, Pa.

Manufacturers of Carriage Hardware and Special Forgings.

Texas Asphalt

High Grade
Uniform Quality
Unexcelled For

Roofing, Saturating
Street Paving
Pipe Dipping
Paints and Varnishes

Samples on Application
Correspondence Solicited
Special Prices on Large Lots.

Prompt Shipments from New York, Phila. or Port Arthur, Tex.

Gulf Refining Company,

Refineries:
Port Arthur, Tex.

General Offices:
814 Frick Bldg., Pittsburgh, Pa.

McCLAVE'S

These appliances
combine valuable
features for burn-
ing the smaller sizes of hard and
soft coal, such as Anthracite, Culm,
Birdseye, Buckwheat and Bi-
tuminous Slack, while the
Grate alone stands unequalled for
burning the larger sizes of these
fuels with natural draught. The
Argand Blower gives EXCELLENT
RESULTS in burning Spent Tan,
Sawdust, Bagasse, etc. For full
For Boiler and particulars send for Illustrated
other furnaces. Descriptive Catalogue C.

McCLAVE-BROOKS CO., Scranton, Pa.

ENGINES, BOILERS, SAW MILLS,
GINNING MACHINERY

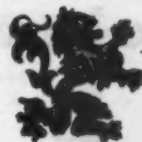
And Kindred Lines Generally.

W. H. GIBBES & CO.
COLUMBIA, S. C.

John Simmons & Co.



104-110 Centre Street,
New York City.



IRON PIPE FITTINGS AND VALVES
-FOR-

STEAM, GAS, OIL, WATER
AND ELECTRICAL ENGINEERING.

PIPE CUTTING AND MACHINE SHOPS
FOUNDRY

BENDING, COIL AND BLACKSMITH SHOPS.

The Hayward Excavating Bucket, "Orange Peel" and "Clam Shell" Buckets.



Dredges, Excavators, Travelling Derricks, Railroad
Excavators, Derrick Fixtures.

APPLIANCES FOR HANDLING COAL AND ALL MATERIALS.
Send for New Illustrated Catalogue.

The Hayward Company,

97 Cedar Street,

New York.

The I. & E. Greenwald Co.

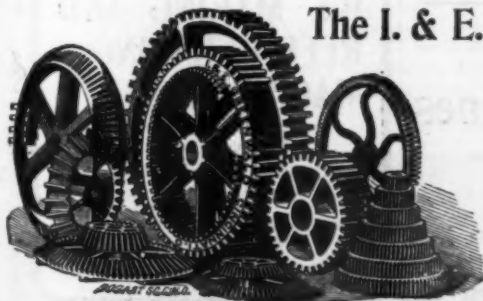
Engineers, Founders, Machinists
and Millwrights.

Steam Engines

Shafting, Hangers, Pulleys,
Sprcket Wheels, Chases,
Etc. Headquarters for Mill
Gearing of All Kinds and
Sizes. Steam Power Plants
Complete.

Write for Catalogue.

720 E. Pearl St., CINCINNATI, O.



The Detroit Sight Feed Lubricators

not only give better service than other makes, but they
last longer and require less repairs. They are of superior
design, are extra strong and heavy, and each lubricator is
tested at 300 pounds pressure to the square inch before it
leaves the factory. Catalogue on application.

DETROIT LUBRICATOR CO., Detroit, Mich.



ALBANY GREASE

LUBRICATES EVERYTHING

Special
Offer:

A sample can of grease and one ALBANY GREASE
CUP free of charge or expense for testing.

MADE ONLY BY ADAM COOK'S SONS, 313 West Street,
Branch, 31 S. Canal St., Chicago, Ill. New York City, U. S. A.

S. MILNOR PRICE, Pres.

V. BACIGALUPO, Vice-Pres.

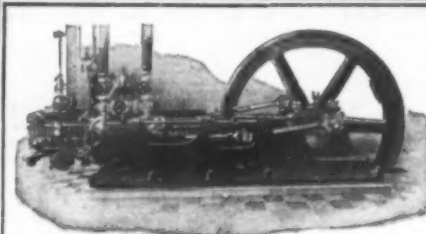
WALTER L. GRAHAM, Secy.

S. M. PRICE MACHINERY CO., Inc.

NORFOLK, VA.

—SELLING AGENTS—

ERIE CITY IRON WORKS, Engines and Boilers.
AMERICAN TOOL WORKS CO., Lathes, Planers, Shapers, Radial Drills, Boring Mills and
Vertical Drills.
LAIDLAW-DUNN-GORDON CO., Steam Pumps, Air Compressors and Condensers.
MIDDLETOWN MACHINE CO., Gas and Gasoline Engines.
DODGE MFG. CO., Wood and Iron Pulleys, Hangers, Shafting, etc.
LAMBERT HOISTING ENGINE CO., Hoisting and Log Skidding Machinery.
DETROIT OAK BELTING CO., Pure Oak Lace Belt.
LUNKENHEIMER CO., High-Grade Steam Specialties.



The Linde
Designed to meet all requirements where high grade
Ice and Refrigerating Machinery
is desired. Drop us a postal for literature.
The Fred W. Wolf Co.
CHICAGO.
5000 IN OPERATION. Atlanta. Townsend Bldg., New York. Ft. Worth.

"STERLING"

ICE and REFRIGERATING MACHINERY

Built for any capacity— $\frac{1}{4}$ Ton upwards.

Strongest Guarantee

as to

Efficiency

Economy

Durability

Complete Ice Making and Refrigerating Plants designed and installed.

Sterling Machines have special features that make them superior to all others in the most essential points.

Correspondence invited. Information cheerfully and promptly given.

THE UNITED IRON WORKS CO.

Capital Stock \$650,000.00

SPRINGFIELD, MO.

When Equipping Breweries,

Remember that we are ready to install, completely,

Brewery and Bottling Outfits and Refrigerating Machinery.

The Vilter Mfg. Co.

832 Clinton St., Milwaukee, Wis.




Ice and Refrigeration

For the cheap production of ice and for reliable refrigeration you can make no mistake by installing a **HARBER** plant. We make all of our installations in the most careful and conscientious manner and furnish the strongest kind of guarantee. Write us for catalogue and list of users. While we have devoted special attention to small plants our larger ones are among the finest in the country.

CREAMERY PACKAGE MFG. CO.
Successor to A. H. BARBER MFG. CO.
REFRIGERATING MACHINE DEPT., 1142-1155 W. 16th St., CHICAGO, ILL.

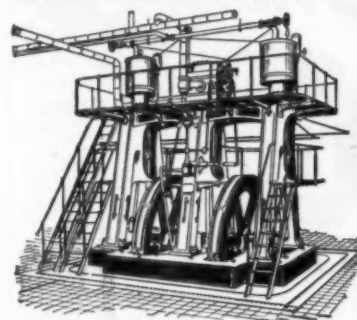
WE BUILD HIGHEST CLASS ICE MACHINES

Fitted for Breweries, Packing Houses, Hotels and Cold Storage Plants. We build plants of any size and guarantee the equipment.

Special attention to additions and repairs.

PENNSYLVANIA IRON WORKS CO.

50th St., and Lancaster Ave., Philadelphia.
New York, 136 Liberty St.



"SOLVAY" CHLORIDE OF CALCIUM SOLID AND FLUID.

The Best Dryer for Air in Cold Storage Houses.
Makes the Strongest Ice Machine Brine for the Least Money.
Send for Calcium Circular and Prices.

CARBONDALE CHEMICAL CO.,

New York Office, 141 Broadway.
Boston Office, 544 Tremont Bldg.

Carbondale, Pa.
Pittsburg, 727 Park Building.
Chicago, 61 Portland Bldg.

Columbus Iron Works Company,

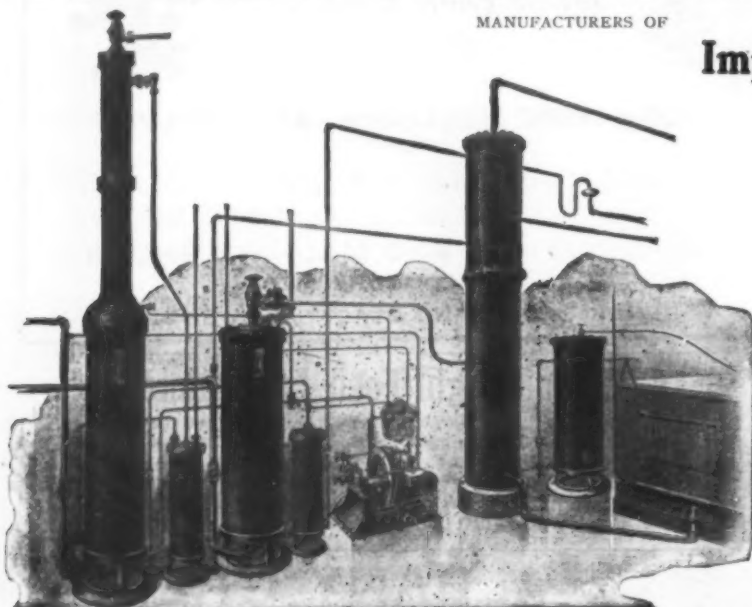
MANUFACTURERS OF

Improved Absorption Ice Machines.

Ice Machine Repairs and Parts
of all Kinds.

From Five Ton Daily
Capacity Up.

All coils made from strictly extra heavy wrought iron pipe. Ammonia valves, flanges and fittings. Duplex fly wheel ammonia pumps. Estimates furnished upon application.



COLUMBUS IRON WORKS COMPANY, COLUMBUS, GA.



Our Improved Compression Ice AND Refrigerating Machines

are Economical and Simple in Operation, built from 1 ton up to 100 tons capacity.

"Single and Double Acting."

The machines now in operation prove it to be the most successful machine on the market. Write for information.

Healy Ice Machine Company.

Chicago, Ill.

JOHN H. MURPHY, New Orleans Boiler Works.

High Grade Boilers, all
Types, Built to Order.

633-43 Magazine St., NEW ORLEANS.

MURRAY WHEELER, Pres.
J. R. LITTLE, Sec. and Treas.

Alabama Iron Works, MILL, STEAMSHIP and LOCOMOTIVE REPAIRS

Iron and Brass Castings. Light and
Heavy Forgings. All Kinds of
Machinery Supplies.

152, 154, 156 and 158 S. Commerce St.,
MOBILE, ALA.

Frick Company,

Waynesboro, Pa.

New York Office, 39-41 Cortlandt St.

ICE MAKING AND REFRIGERATING MACHINES.

Corliss Engines.

Condensing, Non-Condensing
and Compound.

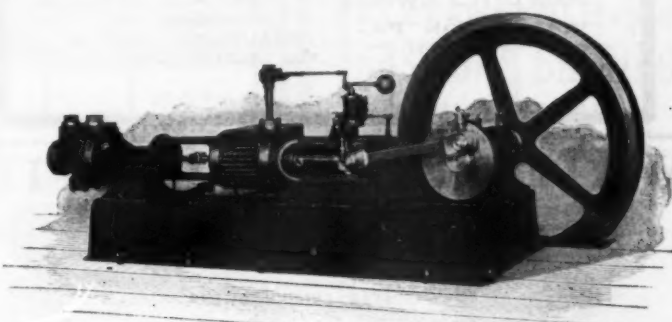
Steam Boilers, Traction and Portable
Engines, Saw Mills, &c.

Catalogue on application.

The Best Ice and Refrigerating MACHINES

Are Made by

Henry Vogt Machine Co.
LOUISVILLE, KY.



AMMONIA PUMP. SPEED ONLY 25 R. P. M.

SIMPLEST. MOST DURABLE. PUREST ICE. NO OIL.
NO RAPID MOVING PARTS.
LESS LABOR, MATERIAL AND REPAIRS
THAN ANY OTHER.

Double Pipe Condensers, Sponge and Charcoal Filters and Ammonia Fittings.

Ice Cans, Coils, Tanks, Boilers,
Stacks, Etc.

Ice Machine Investigators

Are the York Company's best friends.



The more careful the examination
of our machinery the more enthusi-
astic is its endorsement.

York Machinery

is the most efficient, economical and
durable Ice Making Machinery on
the market.

York Ammonia Fittings are al-
ways kept in stock, and are made to
order for any style of plant.

Send for Catalogue No. 4.

YORK MANUFACTURING CO., YORK, PA.

MANUFACTURERS OF

Ice Making and Refrigerating Machinery and Ammonia Fittings.

Remington Ice and Refrigerating Machines



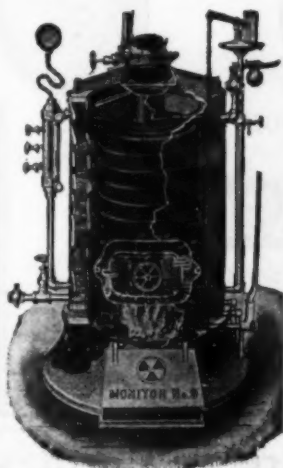
COMPLETE PLANTS
INSTALLED AND
GUARANTEED : : :

ICE MAKING—
CAN OR PLATE SYSTEM
REFRIGERATION—
DIRECT EXPANSION
OR BRINE SYSTEM

The REMINGTON Ice Machine is the
STANDARD Machine of small capa-
city. Beware of IMITATIONS, buy
the ORIGINAL, it is the best.

Manufactured only by

Remington Machine Co.
Wilmington, Del.



Quick Circulation of water prevents sediment anywhere in the Monitor Steam AND Hot Water Boilers

except at the bottom of the water leg,
whence it is easily blown out.

Monitor Steam Generator Mfg. Co.

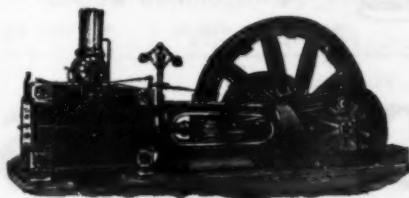
OFFICE AND SALESROOM :

BREWERS' EXCHANGE BLDG. Baltimore, Md.
Fayette and Liberty Sts.

U. J. BOSSLER, Manager.

Home Office and Works, - - LANDISVILLE, PA.

THE HOOVEN, OWENS, RENTSCHLER CO., HAMILTON, OHIO.



Hamilton Corliss Engines.

Engines for Rolling Mills, Electric
Railways, Electric Light
and Cotton Mills.

Engines of all Sizes and for all Purposes

1127 Marquette Bldg., Chicago.
39 and 41 Cortlandt St., New York.
Laclede Bldg., St. Louis, Mo.
403 Equitable Bldg., Atlanta, Ga.

C. C. Moore & Co., San Francisco, Cal.

THE SOUTHERN PIPE COVERING CO.

JOHN A. SELPH, Prop.

Successors to THE SOUTHERN ASBESTOS MFG. CO., RICHMOND, VA.
Manufacturers of Standard Asbestos-Magnesia Steam Pipe and Boiler Covering
and Cements. The only manufacturers of these materials in the South.

THE MEANS & FULTON IRON WORKS

OFFICE & WORKS, 4TH ST. AND 8TH AVE. NORTH, BIRMINGHAM, ALA.
MANUFACTURERS AND BUILDERS OF BOILERS, TANKS, STEAM PIPES AND BLAST FURNACES.
AND WORKERS IN SHEET IRON AND STEEL. ESTIMATES FURNISHED ON STRUCTURAL WORK. BIRMINGHAM, ALA.

RO. PRESTON MEANS,
PRES.
JOHN H. MEANS,
VICE - PRES.
W. M. FULTON,
MANAGER.



COOLING TOWERS.

Furnished With Fans or Chimneys.
(NATURAL DRAFT.)

George J. Stocker,

Patentee and Manufacturer,

2833 S. Kingshighway Boulevard,
ST. LOUIS, MO.

WRITE FOR CATALOGUE. (Illustrated.)

Southern Representatives :

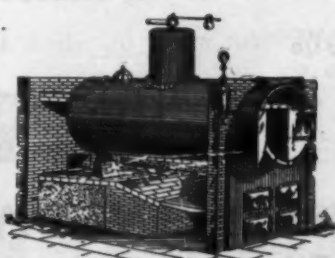
LUDWIG & CO., Engineers,
513 EMPIRE BLDG., ATLANTA, GA.

The Garfield Double Jet is the sim-
plest double tube injector made, and
contains fewer parts than any other
machine of this class on the market.

The Ohio Injector Co.
Wadsworth, O.

It is easy to connect and operate; easy
to clean and repair. It is
self-adjusting.

THE GARFIELD
INJECTOR.



**Engines, Boilers,
Smoke Stacks,
Tanks,**

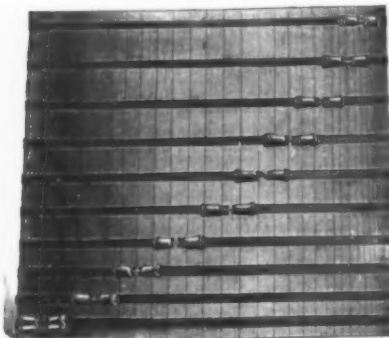
Injectors, Inspirators,
Saw Mill Machinery,
Shafting, Pulleys,
Hangers, Etc.

J. S. SCHOFIELD'S SONS CO.,

MACON, GA.

"Absolutely safe and reliable. Ask your friends."

A Sprinkler System



to be effective must have an abundance of water at high pressure. This cannot be had from a leaky tank. To get the best results for the smallest possible outlay you should have a

Caldwell Cypress Tank

which neither leaks, warps nor twists under the most severe strain, and is scientifically hooped to prevent bursting. The cost is not great as our catalogue will prove. Send for it.

W. E. Caldwell Co., Louisville, Ky.



The best advertising we have is the advertising that comes from satisfied customers.

CARBORUNDUM

grinding wheels and sharpening stones are so eminently superior to any other abrasive materials on earth that users of them can't help telling friends of better work at less cost.

If you don't know all about Carborundum, write
The Carborundum Company
Niagara Falls, N. Y.

OUR TANKS
ARE ALWAYS
~ON TOP~
HONESTLY MADE
WRITE FOR PRICES
THE CYPRESS LUMBER CO.
APALACHICOLA, FLA.

TUPELO WATER TANKS
Equal to cypress and so cheaper.
For delivered prices write
Tupelo Tank Co., 27 Madison Street
Mobile, Ala.

CYPRESS WATER TANKS.
Best in the world. Send for catalogue
Write for delivered prices.
H. F. LEWIS & CO., Ltd.
116 Baronne St. NEW ORLEANS, LA.

Steel Storage TANKS.
HAMMOND IRON WORKS,
WARREN, PA.
Correspondence Solicited.

Gainesville Iron Works,
R. I. MEALOR, Mgr.
Stamp, Saw, Cane Mills, Mining and Mill Supplies.
Shafting, Pulleys, Architectural Iron
Work, Founders and Machinists.
GAINESVILLE, GA.

Corrugated Galvanized Steel
TANKS
FOR FUEL OIL, PETROLEUM OIL WELLS,
FACTORIES, ETC.
Also CISTERNS for under or overground use.
Our work guaranteed. Write
HARRY BROS. CO., 240 Pacific Ave., DALLAS, TEX.
331 Fannie St., BEAUMONT, TEX.

OIL & WATER TANKS
OF ANY CAPACITY
BOILERS STACKS
PLATE & SHEET IRON WORK
THE PETROLEUM IRON WORKS CO.
MAIN OFFICE & WORKS
WASHINGTON PA.
BRANCH OFFICES
PITTSBURG, PA.
BEAUMONT, TEXAS
NEW ORLEANS, LA.

WATER SUPPLY OUTFITS



MUNICIPAL PLANT

For Manufacturing Plants,
Railroads, Small Villages and
Private Residences.

Galvanized Steel
"STAR" COLUMN TOWERS,
Any Height.

Galvanized Steel, Pine or Cypress
TANKS, any Capacity.

STAR WIND MILLS,
Galvanized Steel or Wood, adapted
for farm, residences, power
or irrigating purposes.

"HOOSIER" and "FAST MAIL"
IRON PUMPS.

WRITE FOR CATALOGUE.
Designs and Prices Furnished.



SUBURBAN OUTFIT.

FLINT & WALLING MFG. CO., 516 Oak Street,
KENDALVILLE, IND.
EASTERN OFFICE—96 Wall St., New York, N. Y.

A THOROUGH TEST OF
material is made in the vitrified process by which the
"ABRASIVE"
EMERY WHEEL
is manufactured. Nothing but the very best material
will stand the intense heat to which it is subjected.
That's why we're able to guarantee them to cut as fast
as any emery wheel made.
ABRASIVE MATERIAL CO. PHILADA., PA.

Wire and Springs
OF EVERY DESCRIPTION.
CARY SPRING WORKS,
240 & 242 W. 29th St. NEW YORK, N.Y.



INDIA OIL STONES

Cut Fastest.

Wear Longest.

Will cut metal on which a file will slip. Every stone fully guaranteed.

Manufactured by

The Norton Emery Wheel Co.



INDIA OIL STONES
SHARP AND QUICK

Are made in all Shapes and Sizes;
coarse, medium and fine grades, thus
adapting them to ALL CLASSES OF WORK.

Sole Agents THE PIKE MANUFACTURING CO.

Pike Station, N. H., U. S. A.

SHARPENING STONES FOR EVERYTHING THAT HAS AN EDGE.



"Camel" HAIR BELTING.

Rosendale-Redaway Belting & Hose Co.
NEWARK, N. J.



Rainbow Packing is unrivaled, unequaled and matchless.

"Can't blow it out." Get the Genuine.

Manufactured Exclusively by

PEERLESS RUBBER MFG. CO.

16 Warren St., New York.

16-24 Woodward Ave., Detroit, Mich. Corner Common and Tchoupitoulas Sts., New Orleans, La.
210-214 N. Third St., St. Louis, Mo. 17-23 Beale St. and 18-24 Main St., San Francisco, Cal. 1321-1323
Union Ave., Kansas City, Mo. 709-711 Austin Ave., Waco, Tex. Cor. Ninth and Cary Sts., Rich-
mond, Va. 1212 Farnam St., Omaha, Neb. 202-210 S. Water St., Chicago, Ill. 634 Smithfield St.,
Pittsburgh, Pa. 1601 to 1615 17th St., Denver, Col. 230 S. Fifth St., Philadelphia, Pa. 30th St. and Rail-
road Ave., Birmingham, Ala. 38 S. Meridian St., Indianapolis, Ind. 51-55 N. College St., Charlotte, N. C.



Voorhees Rubber Mfg. Co.

JERSEY CITY, N. J.

Rubber Belting, Hose,

Packings, Valves, Mats, Mattings, Etc.

Rubber Lined Cotton Mill and Fire Hose.

We manufacture only the highest grades.

"Goods Bearing Our Brands Are Always
Guaranteed."

Driving, Conveying, Elevating

EACH LEVIATHAN BELT

IS MADE ON HONOR, AND STANDS FOR

Greatest Power, Durability, Economy

Wherever Run—Wet or Dry.

MAIN BELTING COMPANY,

1219-1241 Carpenter Street, Philadelphia.
BOSTON

NEW YORK

35-57 Market Street, Chicago.
BUFFALO

THE MONARCH Emery and Corundum
Wheel Company,

Manufacturers of

EMERY and CORUNDUM WHEELS.

The Greatest Saw Gummer and Knife Grinder Wheel in the World.

Factory and Main Office: 508-514 Liberty St., Camden, N. J., U. S. A.

Emery Wheels

Will Run Wet or Dry.

CORUNDUM WHEELS.

Polishers and Machinists' Supplies, Rub Stones,
Emery Wheel Machinery, and Diamond Tools.

Vitrified Wheel Co.,

Westfield, Mass.

DID YOU EVER TRY

MEIER'S BELTING?

How do you know it is not
THE BEST?

Made of Oak-Tan Leather.

TRY IT.

JOSEPH MEIER'S SONS,

Factory: Newark, N. J. 49 Day Street, N. Y.
ESTABLISHED 1883.

**ALEXANDER BROS.
BEST OAK BELTING.
PHILADELPHIA.**

If you wish to keep posted on the pro-
gress of the South, read the MANU-
FACTURERS' RECORD. Price \$1 a year.

COMPARISONS OF QUALITY

are not unfavorable to the

RUBBER GOODS

MADE BY

BOSTON BELTING CO., Jas. Bennett Forsyth,
Mfg. Agt & Gen. Mgr.

BOSTON. NEW YORK. BALTIMORE. ATLANTA. MOBILE. NEW ORLEANS.



**The "Original Gandy"
STITCHED
COTTON DUCK BELTING.**

For Strength,
Traction
Power
and
Durability

It is without an equal.

Specially adapted to places where belts are exposed to water, heat,
steam, oils, atmospheric changes, etc. Costs about one-half as much
as the best leather belt on the market—has greater lasting qualities
and will outwear any other make of belt. It is used with the
greatest satisfaction as a main driver, conveyor or carrier. Give the
Gandy Belt a trial and be convinced of its high merit. Beware of
imitations. The real article stamped every ten feet.

"Original Gandy Belt."

Sole Manufacturers,

THE GANDY BELTING CO., Baltimore, Md.

"OUR NAME AND BRAND A GUARANTEE OF QUALITY."

High Grade Rubber Goods,



Belting, Packing,
Tubing, Springs, Valves,
Gaskets,
Flats, and Flatting.
Rubber Lined
Linen and Cotton Hose.

Send for Catalogue, Samples and Prices.

N. J. CAR SPRING and RUBBER CO.

MAIN OFFICE AND WORKS,
JERSEY CITY, N. J.

AGENTS:—Lee Bros., Memphis, Tenn.; Nashville Machine Works, Nashville, Tenn.; Moore
& Handley Hardware Co., Birmingham, Ala.; Southern Brass & Iron Co., Knoxville, Tenn.;
Stratton & Bragg Co., Petersburg, Va.; Southern Supply Co., Norfolk, Va.; N. S. Falford Hard-
ware Co., Washington, N. C.; Lombard Iron Works & Supply Co., Augusta, Ga.; John G.
Christopher, Jacksonville, Fla.; Peden Iron & Steel Co., Houston, Tex.; F. P. Collins Mfg. Co.,
San Antonio, Tex.; Young & Heints, Dallas, Tex.; Richard Mellett, Mobile, Ala.; C. A. Turner,
Pittsburg, Pa.; Miller Supply Co., Huntington, W. Va.; Carolina Supply Co., Greenville, S. C.;
F. W. Axtell, Ft. Worth, Tex.; Little Rock Tent & Awning Co., Little Rock, Ark.; Hyman
Supply Co., New Bern, N. C.

COTTON-BLOOM

Sewed Canvas Belting

FOR IN OR OUTDOOR USE.

Equals Leather Belt. Half The Price.



Made by an entirely New and Original Process. Will not stretch any more than
leather and is equally as strong and durable; a trial will convince you.

SAMPLES AND SPECIAL DISCOUNTS ON APPLICATION.

ENDLESS BELTS A Specialty.

WHITEHURST BELTING CO.,

BALTIMORE, MD.

Eureka Fire Hose Co.



GOLD MEDAL
Awarded at
Pan American Exposition
1901.

13 Barclay St.
NEW YORK.

ORIGINAL MANUFACTURERS OF

**SEAMLESS RUBBER LINED
COTTON FIRE HOSE.**

Also the Celebrated Brands of Eureka Mill Hose, Eureka
Underwriters' Linen, Eureka Garden Hose, Eureka
U. S. Brand Linen Hose, Plain and Rubber Linen, Trojan
Mill Hose, Gem Garden Hose.

Agencies at Charlotte, Greensboro, N. C., Atlanta, Ga.,
Memphis, Tenn., and New Orleans, La.

HARTFELDER-GARBUTT CO.

Mill and Railroad Supplies, Machinery, Engines and Boilers.

301, 303, 305 West Bay St., Cor. Jefferson,

Agents for Revere Rubber Co., Chicago
Belting Co. and Ohio Valley Pulley Co.

SAVANNAH, GA.



POWER TRANSMISSION APPLIANCES.

Cast Iron Pulleys, Rope Sheaves,
Hangers, Shafting, Pillow
Blocks, Couplings,
Friction Clutches,
Etc.

ENTIRE MILLS AND FACTORIES EQUIPPED.

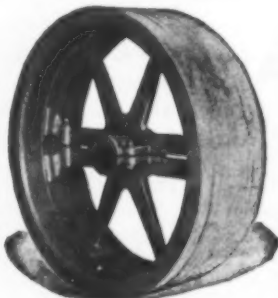
Write for Complete Catalogue
and Discounts.

W. E. CALDWELL CO.,
LOUISVILLE, KY.

THE CHASE

Wood Rim Pulley

with iron hubs and arms,



is adapted to any work which
is required of a pulley.

CHASE PULLEY CO.
Providence, R. I.

Send for illustrated booklet.

Wall's

Everlasting Steel
Specialties

For ENGINEERS, MACHINE SHOPS,
RAILROADS,
FOUNDRIES,
ICE PLANTS,
BREWERS and
STREET RAILWAYS.

Bells,
Oilers,
Torches,

made of heavy steel with
brazed joints and seams. Will
stand the hardest usage. Easy to han-
dle. No Leaks. Guaranteed. Write us.

The P. Wall
Mfg. Supply Company,
Allegheny, Pa.

THE AMERICAN

All-Wrought Steel
Split Pulley.

A HANDSOME DESIGN.
SUBSTANTIAL CONSTRUCTION.
A PERFECT PULLEY.

SEND FOR CATALOG.

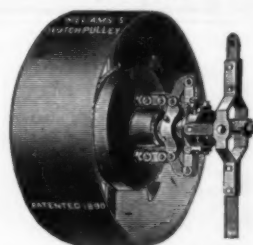
THE AMERICAN PULLEY CO.

29th and Bristol Streets,
PHILADELPHIA, PA.

GILBERT
WOOD
SPLIT
PULLEYS

SAGINAW MANUFACTURING CO.
Saginaw, Michigan, U. S. A.

New York Branch, - 44 Dey Street.
Chicago Branch, 35 S. Canal Street.
Sales Agencies in all the Principal Cities.
Cable Address: ENGRAVE, A B & C Lieber's Codes.

The Strongest, Cheapest and Best
CLUTCH PULLEY
MADE.

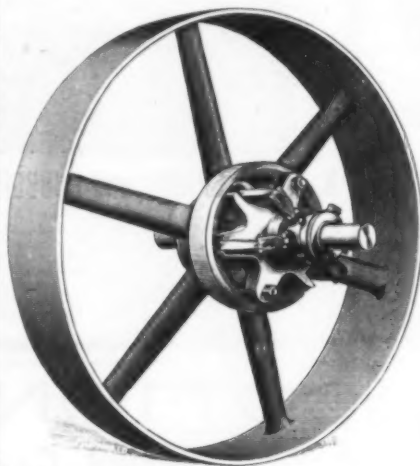
M. F. WILLIAMS MFG. CO.
9th and Montgomery Sts.,
ST. LOUIS, MO.

MORAN FLEXIBLE JOINT



Used for all purposes requiring a Flexible Conveyor of Steam,
Air or Liquids. Made in all sizes.

MORAN FLEXIBLE JOINT CO. (Inc.) 183 THIRD STREET,
LOUISVILLE, KY.

PULLEYS,
FRICTION
CLUTCHES.

Every Appliance
FOR THE
Transmission of
Power.

The MINSTER MACHINE CO.
MINSTER, O.

A HAPPY
COMBINATION

of the best features of the
all steel and all wood pul-
leys make the new

**Steel Center Wood Rim
Pulley.**

Send for Prices.

Oneida Steel Pulley Co.
ONEIDA, N. Y.

**T. B. WOOD'S SONS,**
CHAMBERSBURG, PA.

MANUFACTURERS OF

POWER TRANSMISSION APPLIANCES

Including

Rope Transmission.

Special attention paid to complete equipments of machinery for the
transmission of power. Rope Drives designed and furnished to transmit
any amount of power.

SEND FOR CATALOGUE AND MENTION THIS PAPER.

POWER TRANSMITTING MACHINERY.

Entire Contracts taken for the equipment
of Mills and Factories with SHAFTING,
HANGERS, PULLEYS, COUPLINGS, GEAR-
ING AND FRICTION CLUTCHES. Also
the erection of same.



Poor design and Imperfect Construction
in Transmission Machinery is a source of
great loss in power and excessive operat-
ing cost. SEND FOR OUR CATALOGUE.

THE A. & F. BROWN CO., 25 Dey Street,
NEW YORK. ENGINEERS, FOUNDERS and MACHINISTS.





ALLIS ROLLER MILL.

ALLIS-CHALMERS Co.

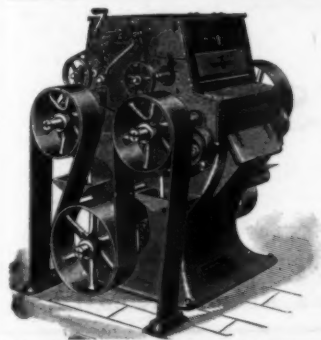
General Office **CHICAGO,** New York Life Bldg.

BUILDERS OF

Flour Mills, Corn and Cereal Mills.

Universal Bolters—Reliance Purifiers
Reliance Sifters—Allis Roller Mills

WRITE FOR DESCRIPTIVE CATALOGUE AND PRICES.



FLOUR MILL MACHINERY.

The kind that stands high in the estimation of millers everywhere. Its 51 years record is a good one. We build complete Flour, Corn and Cereal Mills of any desired capacity. We make Mill and Elevator Machinery and Supplies of all kinds, Portable Burr Stone Mills, Roller, Corn and Feed Mills. Bolting Cloths made up to order.

HIGH-GRADE SHAFTING, POWER CONNECTIONS, GEARING and PRACTICAL ROPE DRIVES a Specialty

CORRESPONDENCE SOLICITED.

NORDYKE & MARMON CO., 1133 West Morris St.
INDIANAPOLIS, IND., U. S. A.

Munson's Improved Underrunner PORTABLE MILL.

For Grinding Corn, Corn and Cob, Oats, &c., &c.

Scientifically and Practically Constructed of the Best Material.



READ OUR CLAIMS:

Grinds rapidly.
Keeps cool, as spindles run in oil.
Simply built, economical and easily run.
The stones are carefully selected.
Perfect lubrication, requiring less power.
Parts are interchangeable.
Has given entire satisfaction to others.

We ship promptly and procure the lowest freight rate possible for customers.

MUNSON BROTHERS COMPANY,
Broadway, Utica, N. Y.

GOLDEN'S FOUNDRY & MACHINE CO. COLUMBUS, GEORGIA.

Manufacturers of

Hangers, Shafting, Machine Moulded Pulleys.

Send for Price List and Discount Sheet.

Couplings, Pillow Blocks, Floor Stands, Collars, Etc.



OILLESS BEARINGS.

Metallized Loose Pulley Bushes require no oil or other lubricant, either at the start or occasionally afterwards. Will run perfectly dry for years.

North American Metallizing Co.
West Ave. Cor. W. 3rd St.
Long Island City, N. Y.
Send for Loose Pulley Circular No. 6.

FOR INFORMATION ABOUT U. S. MAIL CHUTES,

WHICH ARE

A NECESSITY IN OFFICE BUILDINGS AND HOTELS.

Write to the sole makers,
THE CUTLER MFG. CO., Rochester, N. Y.
PATENTED. AUTHORIZED.

Power Transmitting, Elevating, Conveying and Special Machinery,

—ALSO—

Flour, Corn, Rye, Buckwheat and
Rice Machinery, Turbine Water
Wheels and Mill Supplies of every
description.

THE WOLF CO.

Export and Atlantic Coast Department,

No. 804 Penn'a Bldg. PHILADELPHIA, PA.

Main Office and Works, Chambersburg, Pa.



BURR STONES

For all purposes.
Manufactured by us.Also ROLLER MILLS, SMUT MACHINES and
GENERAL MILL MACHINERY.

Established 1847.

B. F. STARR & CO., Baltimore, Md.

Our French Burr Mills

Are used by the leading mills because they are the Best.
Investigation will convince you of their superiority.
Catalog and Discounts on application.

SPROUT, WALDRON & CO., P. O. Box 310, MUNCY, PA.
FLOUR MILL BUILDERS AND CONTRACTORS.



CAREY'S MAGNESIA STEAM PIPE AND BOILER COVERINGS

Are the Most Efficient, Durable and Economical.

The Philip Carey Manufacturing Co., { General Offices—
LOCKLAND, OHIO.

FACTORIES—Lockland, O., Baldwinville, Mass., Plymouth Mtg., Pa.

BRANCHES—New York, Philadelphia, Boston, Pittsburg, Cleveland, Cincinnati, Charlotte, Atlanta.

See our Roofing Advertisement on Page 7.

American Sheet Steel Company

Battery Park Building New York

Manufacturers of all varieties of

Iron and Steel Sheets

Black and Galvanized, Plain and Painted
Flat, Corrugated and "V" Crimped

Apollo Best Bloom Galvanized Sheets
Wellsville Polished Steel Sheets

W. Dewees Wood Company's Planished Iron
W. Dewees Wood Company's Refined Iron

GALENA-SIGNAL OIL CO. FRANKLIN, PA.

Successors to Galena Oil Company and
Signal Oil Company, sole manufac-
turers of the celebrated Galena
Coach, Eugene and Car Oils
and Sibley's Perfection
Valve and Signal Oils.

Charles Miller,

PRESIDENT

Rubber Stamps, Seals,
Stock Certificates and Bonds,
Manufactured by

NATIONAL SEAL WORKS
P. O. Box 60, RICHMOND, VA.

STOCK CERTIFICATES
FOR CORPORATIONS.
40 DESIGNS. REQUEST OUR SAMPLES.
MYERS' PRINTING HOUSE, NEW ORLEANS.

THE PITTSBURGH REDUCTION CO. PITTSBURGH, PA.

ALUMINUM

Electric Conductors, Ingots, Bars, Plates,
Castings, Tubes, Sheets, Etc.
Southern Office, Bond Bldg., WASHINGTON, D. C.

COLUMBIA SUPPLY CO. COLUMBIA, S. C.

DEALERS IN—

Machinery Supplies.
Everything for Saw Mills.
Rubber, Leather and Gandy Belt.
Pipe, Valves and Fittings.
Estimates Given on Specifications.



Black Diamond Prepared Roofing

In Two and Three Ply.

We make nine-tenths of all the Prepared Roofing
sold in the United States. A better testimonial?

BARRETT MFG. CO.,

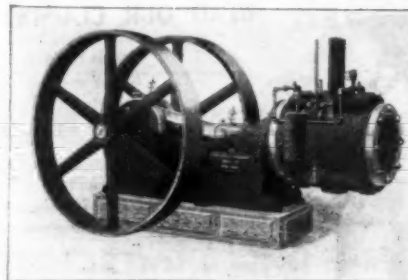
St. Louis, Mo. New Orleans, La.

Philadelphia, Pa.

AIR COMPRESSORS.

BUILT IN
ALL
TYPES AND
SIZES
FOR MACHINE
SHOP
SERVICE

ROCK
DRILLS



BELT DRIVEN

DRIVEN
BY
BELT OR
STEAM
FOR
HIGH OR LOW
PRESSURES.

PNEUMATIC
TOOLS.

THE

INGERSOLL-SERGEANT

DRILL
CO.

CLEVELAND, OHIO.

26 CORTLANDT ST., N. Y.

SUPERIOR GRAPHITE PAINT

excels for bridges, structural steel, roofs (especially
canvas roofs), tanks, boiler fronts, corrugated iron—
in fact for all surfaces, wooden or metal, exposed to
heat, water, weather, or destructive fumes.

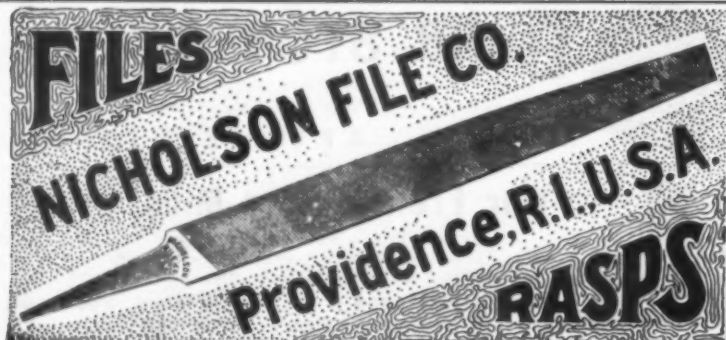
This paint is durable because it's made of the best
materials and with the greatest care. We shall be
pleased to send you further information.

Detroit Graphite Mfg. Co.

New York.
Chicago.

Detroit, Mich.

Cleveland.
Buffalo.



MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XLIV. No. 13.
WEEKLY.

BALTIMORE, OCTOBER 15, 1903.

\$4.00 A YEAR.
SINGLE COPIES, 10 CENTS.

Manufacturers' Record.

PUBLISHED EVERY THURSDAY BY THE
Manufacturers' Record Publishing Co.

RICHARD H. EDMONDS, President.
THOMAS P. GRASTY, Vice-President.
FRANK GOULD, Secretary-Treasurer.

OFFICE: MANUFACTURERS' RECORD BUILDING
BALTIMORE.

RICHARD H. EDMONDS,
Editor and General Manager.

THOMAS P. GRASTY,
General Staff Correspondent.

SUBSCRIPTION, \$4.00 a Year.
TO FOREIGN COUNTRIES, . . 26s. 6d. a Year.

BALTIMORE, OCTOBER 15, 1903.

COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

THE DAILY BULLETIN of the Manufacturers' Record is published every business day in the year for the purpose of aiding manufacturers and business men generally who need to keep in daily touch with the new industrial, railroad and financial developments of the South and Southwest. Supplementing and in connection with the work of the Manufacturers' Record, it is an invaluable aid to all who are seeking business in the South and Southwest, the most wonderfully endowed section of America, where industrial, railroad and financial activity is creating an ever-widening market for machinery of all kinds, railroad equipment and building supplies, and for financial operations, etc., and where the knowledge and skill of the engineer and expert will find their largest field of operation.

The Daily Bulletin is intended simply to cover every day the work of the "Construction Department" of the Manufacturers' Record in reporting every new mining, manufacturing, railroad and financial enterprise organized in the South and Southwest, and it is not intended to be a general daily newspaper. To all who want to be advised every day of every new enterprise organized in that section it is invaluable.

In a reference to Baltimore newspapers the Building Trades Employers' Association Bulletin of New York city says:

Baltimore's class journals include the Manufacturers' Record, which is virtually the industrial voice of the whole new South.

TEXAS-LOUISIANA OIL.

With the collapse of the great speculation in the Southwestern oil fields the general public has not given as much attention to the oil situation in Texas and Louisiana as was attracted to that region two or three years ago. The fact, however, is that a vast oil industry has been established there on a permanent basis, and money is being made all over the field. The substantial features of the industry are de-

tailed on another page of this week's issue of the Manufacturers' Record in correspondence from Beaumont, with special reference to Texas. In that are described the permanent improvements in the way of tanks, pipe lines and refineries and the general conditions of trade in the output. Of the three largest companies in the field, the J. M. Guffey Petroleum Co. owns fourteen iron tanks at Spindle Top with a capacity of 666,000 barrels, twenty-one tanks at Port Arthur of 1,160,000 barrels capacity, two 25,000-barrel tanks at Sour Lake and is building nine others there of 55,000 barrels capacity each, twenty miles of six-inch pipe line from Spindle Top to the Gulf refinery at Port Arthur and other stretches of pipe line, fifteen steamers plying between Port Arthur and London and New York, tank cars, etc. Twenty-eight other companies have steel tankage in Texas alone of more than 10,000,000 barrels capacity, and there are being produced in the Texas-Louisiana fields today at least 80,000 barrels of oil every twenty-four hours, with a likelihood that this production will be maintained, if not increased, for an indefinite number of years. In 1900 the output of petroleum in the whole country was 63,362,704 barrels. That included 836,039 barrels from the Corsicana (Texas) field and nothing from those fields whose development dates from the striking of the Lucas gusher in January, 1901. Now the annual output of the new fields in Texas and Louisiana is about 25,000,000 barrels, nearly five-twelfths of the total output of the whole country three years ago.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 56 and 57.

MERELY A VAUNT.

Mr. Thomas I. Kidd, vice-president of the American Federation of Labor, is quoted at Chicago as announcing that if organized capital, through its anti-boycott and employers' associations, does not stop its raids on the savings of the trades-unions, the union men will withdraw \$300,000,000 from the savings banks, and intimating that it is within the power of union labor to bring about a financial panic. This evident threat against resort to law for protection against the cowardly boycott and other devices of misguided members of organized labor to bolster up a rule by the minority should hardly be taken seriously, except by the great masses of wage-earners of the country, and by them only as an indication of the foolhardiness which they are invited to sustain. Granted that the 1,200,000 members of labor organizations are so fortunate as to be drawing interest from \$300,000,000 in savings banks, it is scarcely within the range of possibility that even a large minority of those 1,200,000 depositors could be persuaded to withdraw their savings from the banks with the in-

tent of creating a financial panic. Granted that such withdrawal would create a panic, the suffering and loss entailed by such a panic would fall immediately and most disastrously upon the wage-earners of the country. They would not only lose the interest which their undisturbed deposits would bring them, but they would be deprived for a time of the opportunity to earn wages. From whatever point of view the threat of Mr. Thomas I. Kidd is considered its absurdity is manifest and its utterance is likely to do more damage to the cause of organized labor than to any other thing.

SECRETARY WILSON TO STUDY COTTON.

It is announced that Secretary Wilson will visit the South to make a personal investigation of the cotton crop of this year. A dispatch from Washington to the Baltimore Sun says:

There have been so many conflicting reports on the subject from official and unofficial sources that the conservative, practical Secretary has concluded he may be able to learn more by personal observation in the cotton fields than he can from the reports sent him by his agents and others who have a commercial interest in the cotton market.

If the Secretary of Agriculture's interview of August 20 last regarding cotton conditions—an interview which, coming from that quarter at such a vital time, could hardly be classed as conservative—was based upon reports from "others who have a commercial interest in the cotton market," the reports must have come from those individuals whose interest is to lead the cotton-growers to sell at the lowest price. Facts of the past month have rather weakened the position of these bears, and they may be of sufficient weight to induce Secretary Wilson to make the acquaintance during his visit to the South of those "gamblers" whom he credited with responsibility for the high prices and to discover whether he has not been committed to a grave mistake.

In that famous interview he declared that "the shortage of raw cotton to the manufacturer is not due to shortage in the crop, but to the fact that the corner in cotton has put the price of the raw material to a point where the manufacturer cannot profitably use it." As bearing upon that point and upon the question of gambling Secretary Wilson might ponder with profit upon the statement by a correspondent of the New York Times that this is the season of the year when "the spinner and the bear operators combine to depress prices in order that they may secure the staple from the hand of the farmer at a price lower than general conditions warrant," and upon the situation in New York on September 29 thus described:

These men had contracted to deliver cotton to Brown, and as Brown owned all the cotton, they had to buy cotton at his price or fail to keep their contracts, which is tantamount to bankruptcy.

Perhaps such pondering might lead him to revise his opinion about the

"gamblers," and might suggest that a responsible official of the government should not be misled into statements which might aid a combination of spinners and bear operators "to depress prices in order that they may secure the staple from the hands of the farmer at a price lower than general conditions warrant."

As to the effect of the "high prices" for cotton, he might find opportunity during his trip to the South to gain the point of view of the producer, such as that set forth by James R. Maxwell of Abilene, Texas, in a letter to the New York Journal of Commerce. Inspired by the remarkable expression by President Walmsley of the New England Cotton Manufacturers' Association of hope for success of "efforts now being made to grow cotton in other countries in sufficient quantity and of the required staple," Mr. Maxwell wrote regarding low prices of cotton:

The continuation of the selling of cotton at less than ten cents means a continuation of holding the raiser of cotton down to poverty, ignorance and debasement from what such labor in supplying the needs of such a staple to the world should be entitled to. "The hardships and suffering of thousands of families" caused by the high prices of cotton, according to Mr. Walmsley, as a matter of fact do not amount to a row of pins in comparison to the "hardships and suffering" of thousands and tens of thousands of families entailed by the hammering down of the prices of cotton below the average cost of production, as has been done for years back. The commercial world cares absolutely nothing for the well-being of the producers. The chances now seem to be that this coming crop will likely net the producers a small profit. These producers naturally are not caring much about the howls of the manufacturing interests, nor do they suppose that there has been any philanthropy influencing those responsible for tolerably fair prices for cotton. . . . They are not rejoicing at anyone's misfortunes or sufferings; they are merely feeling good at being able to see that perhaps they have been able to meet their obligations this year, for the first time, perhaps, in a long series of years.

Mr. Maxwell's impressions about all the phases of the problem may not generally prevail, but as a cotton-planter of thirty-five years' experience his opinion about the effect of 10-cent cotton, as far as the producers are concerned, ought to have some weight.

In this connection it may be interesting to recall the fact that in the last hundred years there have been but two periods—one between 1840 and 1849 and the other since 1890—in which the average price of cotton was not above ten cents a pound, and yet there was a market for the cotton goods produced during that time, and that while growing cotton for eight cents a pound is fairly profitable to more thrifty Southern farmers on exceptional land, 10-cent cotton means comfort for the great mass of them. It is hoped that the visit of Secretary Wilson to the South may lead him to a conviction that the "high prices" of cotton are not due entirely to "gamblers;" that they are but a return to the normal for the cotton-growers, and that even the mills may survive under them, whatever may happen to the bears who sell cotton that they never possess.

INTERURBAN RAILWAYS IN THE SOUTH.

Scarcely a day passes without the announcement of a plan to build an interurban electric-railway in some part of the country. Recently a number of these announcements have come from Southern States, one of the most recent being a project for an electric railway across the State of Virginia from the Potomac river to the North Carolina boundary; still another is the plan for a line between the cities of Houston and Galveston, Texas; a third is for a line between Atlanta and Marietta, Ga. In Kentucky there are several plans on foot in and about Louisville. Other plans are noted around Nashville, Tenn. In West Virginia there are several interurban-railway projects in the vicinity of Wheeling, Parkersburg and other places. In fact, there is not a State in the South that is without an interurban railway either in operation, in process of construction or in prospect. Maryland, North Carolina, South Carolina, Florida, Alabama, Mississippi, Louisiana, Arkansas and Missouri all have interurban projects under way in some form or other, as well as the other States herein named, while in the Indian Territory and Oklahoma there are also plans of magnitude for electric roads, one of the most notable being to connect Guthrie and Oklahoma City.

Undoubtedly, interurban electric railways must play a considerable part in the further development of the South. The success of the Augusta and Aiken line and also of that between Richmond and Petersburg, as well as others, such as the Dallas and Fort Worth road in Texas, proves the availability of electric traction under certain conditions and in certain localities. Concerning the last-mentioned line a dispatch from Fort Worth says that soon the management will have to solve the problem of how to care for the travel. It was opened about a year ago with only six stations, including the terminals, but the demand for accommodations has been so great that there are now thirty-one stopping-places on the line, which is only about thirty-two miles long, and demands are being made for other stations. The growth of business, it is stated, while as great as was expected, has come sooner than the most sanguine officials anticipated.

Electric interurban roads have been quite extensively developed in several of the Western and Northern States, Ohio and Indiana particularly being well supplied with this method of transportation. Such lines are needed in all the States of the South, and the sooner they are constructed the earlier will be realized the benefits to accrue from development of the great natural resources of that section. The notable success of the Dallas and Fort Worth road shows what may be expected to result from similarly connecting other progressive cities. Had anyone been told a few years ago that such rapid growth of business would follow the establishment of an electric line between those two towns of Northern Texas he would probably have been incredulous, even if he did not scoff at the idea; yet the stubborn facts of today prove that his judgment would have been amiss, and now they should be borne in mind by those who have to overcome prejudice and ultra-conservatism in order to carry out future electric-railway plans.

Such projectors and promoters of new electric railways will find much of practical interest in an article recently published in the Manu-

facturers' Record entitled "Social Effects of Interurban Electric Roads." The author, Mr. J. B. Scott, C.E., presents there many interesting and valuable facts concerning what has been done by the building of such lines, and he also gives considerable information about the manner of proceeding with the financial organization of such enterprises. His suggestions will doubtless prove to be of practical value to persons who, realizing the necessity for electric interurban railways and desiring to build them, may lack the necessary financial experience to insure the fulfillment of their plans.

Electric railways undoubtedly have their limitations, but they also have decided advantages which enable them to perform service under conditions which would be prohibitory for steam lines. They are, therefore, found valuable not only for giving transportation to parts of the country from which the steam road is excluded by the topography, but as feeders to steam lines. Necessarily interurban railways take from steam roads a certain character of travel. For instance, in close proximity to centers of population they carry most of the passengers, but it must not be forgotten that they also develop sections of country to a degree that insures to the steam roads such increased patronage, both in passengers and freight, that in time it more than compensates for the loss in local passenger travel. Each type of railway has its particular field of service, and when either has been built with due regard to traffic requirements there will not be rivalry between steam and electric roads, but a friendly interchange of business, just as the street railways of a city convey passengers to and from the terminal stations of trunk lines.

GREENSBORO NOT SLIGHTED.

Mr. P. D. Gold, Jr., president of the Young Men's Business Association of Greensboro, N. C., writes to the Manufacturers' Record under date of October 9 as follows:

I have this morning received a letter from a very prominent man in Greensboro, N. C., who desires that I ask you, in the language of the North Carolina mountaineer, "how come" Greensboro was alighted in your article suggesting points in North Carolina worth seeing by members of the American Economic Association on their way to New Orleans. I enclose you herewith the editorial which brings up the question. Now we would like to ask why Greensboro is not worthy of mention.

We wish that the "very prominent man in Greensboro, N. C.," had written to us for the information he desires. If Mr. Gold had been acquainted with the facts it would have been unnecessary, we believe, for him to write as he has done. He has been stirred up by an editorial of about a week ago in the Charlotte Observer, but the tone of his letter shows that he is evidently not aware of the genesis of that editorial. We take pleasure, therefore, in giving him the facts.

Several months ago the Manufacturers' Record received a letter from Mr. Theodore Marburg of Baltimore asking, in behalf of the president of the American Economic Association, which is to meet at New Orleans in December next, that we suggest stopping-points of possible interest to a party of members of the association on their trip to and from New Orleans. The narrow limitations for such suggestion appeared in the following statement of Mr. Marburg:

We are planning to have a private car and to go and come by different routes, stopping at two or three points on the way down and an equal number on the way back.

Deferring the suggestion until a convenient season, the Manufacturers' Record published on July 23 an editorial embodying Mr. Marburg's letter, dwelling upon the difficulties of making adequate suggestions under the limitations of the request, and stating that confining the stops to five or six points would permit the visitors hardly to skim the economic South, so that they would be obliged to base their impression largely upon a flying view. We then sketched a railroad itinerary, mentioning casually as included in that itinerary about twenty-five localities in the whole South, and omitting to mention about two hundred and fifty other localities, including Greensboro, N. C. We could have mentioned sixteen or twenty places in North Carolina instead of six, all of them worthy with Greensboro of at least a day's visit from persons studying the South, but that was not the purpose of Mr. Marburg's request. He distinctively emphasized the short time allotted for the trip, and recognized that his party was not to expect from the Manufacturers' Record a guide-book for a six months' trip, but merely a broad sketch of the many and vast energies of the South.

This we tried to present as briefly as possible, in the belief that every progressive Southern community would welcome the mention of any of its neighbors as indicative of the advancement and advantages of all, and in the hope that many of them might make the sketch the occasion to invite, of their own initiative, the attention of the visitors to themselves. That was the spirit in which the Manufacturers' Record, not undertaking to invite the visitors to be the guests of any community, outlined the itinerary, and, referring to its conclusion, said:

The travelers will then have hardly familiarized themselves with the table of contents of the volume of the economic South. But it is certain that their appetite for the details will be whetted, and they will regret that they had not stopped at sixty places instead of six.

We hope that President Gold will read our editorial of July 23 and will then recognize that the assumptions in his letter to us are not justified either by anything in that editorial or by the attitude of interest in the welfare of all the South and of all communities there which the Manufacturers' Record has maintained for more than twenty years.

TO UPBUILD THE SOUTH.

A correspondent of the Evening News of Baltimore, discussing the estimate that 20,000,000 immigrants have landed in the United States since 1820, deduces figures tracing to this immigration the prosperity of this country. He shows that of the 67,000,000 whites in the country, 36,000,000, or more than 50 per cent., are foreign born, or children of foreign-born parents. He says:

That is the secret of American prosperity; we had the natural resources, and men came to develop them; energetic foreigners and enterprising men from the Eastern States went West as pioneers, pushing the frontier westward to the Pacific, developing the resources of the region, carrying civilization with them and growing up with the new country. Cities grew and are flourishing; the wilderness has been made to blossom as the rose. It took many workers and many years to supply the domestic needs of the rapidly-growing nation; as these were supplied we had a gradually-increasing surplus, which we exported, until last year our exports were close to \$1,500,000,000, and still increasing. Thus prosperity goes marching on.

For various reasons, hardly necessary to rehearse here, comparatively few of the immigrants found their way to the

South. The fact to be borne in mind now is that most of the reasons why the South did not have a larger share no longer are active, while at the same time it is the portion of the country whose natural resources have been least developed. These await the energetic foreigners and the enterprising men from other parts of the country of the class who made their fortunes in building up the great West. That these men and their children are willing to repeat in the South the experience in the West of forty and fifty years ago cannot be doubted. The very activity of Southern railroads in attracting immigration to the South is proof of it. But the willingness to find homes in the South and the readiness of railroads to satisfy the wish must be backed up by persistent, painstaking advertisement of Southern advantages by home folks and by hearty whole-souled welcome to the newcomers.

SOUTHERN WORKERS WARNED.

About two weeks ago a report was published from Fall River, Mass., that the United Textile Workers of America had virtually abandoned the attempt to unionize Southern cotton mills through extraneous influences. At the instant the Manufacturers' Record stated that the very publication of such a report meant that the campaign against the Southern textile interests had not been abandoned. Now comes a dispatch from Philadelphia announcing that the convention of the United Textile Workers of America, which will meet in that city on October 20, will devote much of its time to the discussion of unionizing cotton-mill labor in the South, and adding:

The unionizing of the Southern cotton-mill workers is the most vexing question expected to come before the convention. It may be said here that some of the leaders among the unionized workers of the North feel that they have the warm secret support of Northern manufacturers in their efforts to organize the Southern workers, as the accomplishment of this design would lessen the fast-growing advantage the Southern mills have in their competition against the Northerners. The problem, however, is most difficult. Textile labor leaders here explain that the Southern workers have little union enthusiasm. They show a willingness to organize when approached by an aggressive organizer, and stick to the union as long as the organizer remains among them, but soon drift away when he leaves. Labor leaders say, however, that the coming convention will tackle the Southern problem with a determination to solve it and to unionize the whole field. The ultimate object is to bring the Southern cotton-mill worker up to the hours and wages of the Northern worker.

And the ultimate result of this extraneous effort, if it could by any possibility succeed, would be the duplication for Southern workers of the distress and other evils manifested elsewhere at irregular intervals, and most recently in Lowell, Mass., and Philadelphia, Pa. How could there be any other result of successful agitation under the auspices of the United Textile Workers of America? For it is one of the most revolutionary bodies affiliated with the American Federation of Labor. Here are a few specimens of its "principles" selected from the report of the United States Industrial Commission:

Society at present is composed of classes whose interests are highly antagonistic to each other.

The few hundred thousand proprietors arrogate to themselves the larger part of the wealth produced by the workers.

The laboring millions receive from the product of their labor only so much as is necessary to live a life of misery and starvation.

The proprietary class presses into its service the power of the State, the police, militia, press and pulpit to protect the posses-

sions produced by others and to declare for the "sacredness" of property.

While the millions of the working people are left without the means of existence, without rights and unprotected, betrayed and sold out to their enemies by the State, by the press and by the pulpit, the arms of the police and of the militia are directed against them.

That is a sweet-scented platform from which to approach the full-blooded American workers in Southern cotton mills. Its anarchy may appeal to the Greeks, the Poles, the Huns and the riff-raff of aliens among the workers in other parts of the country, but it is not believed that the plans of the United Textile Workers against the South, whether or not they may be secretly encouraged in a few instances by representatives in the North of their mortal enemies, "the capitalistic class," will prevail to any extent in the South. Alabama by recent enactment has pointed the way for a suppression of the methods through which alone such an agitation can succeed. The announcement from Philadelphia ought to be sufficient warning.

BALTIMORE'S FINANCIAL GROWTH

A study of Baltimore banking institutions as they were in 1893 and as they are now brings out some impressive and important facts upon the great increase in the financial strength of the city within the past ten years. In 1893 the total of capital, surplus and undivided profits and deposits in the various national banks, State banks and trust companies in Baltimore amounted to \$56,690,564, and it now amounts to \$127,919,541, an increase of \$71,228,977, or more than 125.6 per cent. The total capital of these institutions is now \$30,223,460, an increase as compared with ten years ago of \$12,905,148, or more than 74.5 per cent., but the surplus and undivided profits, which now amount to \$28,976,241, display the great gain of \$21,412,455, or more than 283.1 per cent., and the deposits now present a total of \$68,719,840, an increase of \$36,911,374, or more than 116 per cent. The capital, surplus and undivided profits combined now amount to \$59,199,701, an increase of \$34,317,603, or more than 137.9 per cent.

During the same period there was also a remarkable increase in the deposits of the savings banks of Baltimore. In 1893 their total was \$41,877,622, and now they are \$66,928,028, an increase of \$25,050,406, or more than 59.8 per cent. Adding the savings-banks deposits to the total of the other financial institutions makes a grand total of \$194,847,569, which shows a gain of \$96,279,383, or over 97.6 per cent., in the last decade. Inasmuch as these calculations are based upon the last statements of the various institutions considered, and as some of these statements were made early in the year, it is safe to report the total financial strength of all Baltimore banks and trust companies as being now \$200,000,000.

In renewing subscription to the Manufacturers' Record Fant Bros. of Anderson, S. C., write:

The possibilities of enlarging a business by reaching the best and most intelligent manufacturers and dealers are beyond a business man's most sanguine imagination if he reads persistently and closely the pages of your paper and follows them up with prompt correspondence and inquiries about buying or selling any kind of machinery or material, whether new or second-hand. Four dollars is nothing for the subscription when it makes a subscriber liable to make hundreds and thousands in proportion to the nature and volume of his business by simply posting him.

A REWARD OF PUBLIC SPIRIT.

A notable and gratifying result of the temporary troubles which have come upon J. Wm. Middendorf & Co. of Baltimore and John L. Williams & Sons of Richmond, Va., is the substantial sympathy which has been extended to the firms from many quarters, together with other evidences of the esteem in which they are held in business circles. An unusual tribute came to John L. Williams & Sons from the Chamber of Commerce and from the common council of Richmond. The first-named body adopted unanimously the following resolutions:

"The Richmond Chamber of Commerce has heard with regret of the temporary embarrassment of the firm of John L. Williams & Sons, composed of gentlemen who, by their correct dealings and liberal public spirit, have won the confidence and esteem of the entire community, and the Chamber rejoices to believe that the condition of their affairs justifies the hope that the firm will in the near future discharge all of its obligations and have remaining for itself a very considerable surplus."

In the same spirit the common council adopted the following:

"WHEREAS, the common council of the city of Richmond has learned through the public press of the temporary financial embarrassment of the public-spirited citizens of this city, composing the firm of John L. Williams & Sons; therefore be it

"Resolved, That we express our profound sympathy with the gentlemen of said firm in their present embarrassment, and an earnest wish for their speedy relief, recognizing them as being among our most enterprising, generous and progressive citizens, well worthy of our highest esteem."

In reply to the latter, Mr. John L. Williams wrote to its mover, Mr. Morgan R. Mills, as follows:

"In behalf of myself and family, I beg leave to offer to you, and through you to the city council, our sincere thanks for the resolution offered by you and approved by the body referring to us. We have tried to do our duty as good citizens, and feel very well assured that no one will be the worse for our efforts. Whether we come out of this storm with little or much or nothing, the works that have been accomplished for our city and the South will stand as lasting benefits. It is our unspeakable and profound gratification to be associated with the advancing welfare of our people."

The incident is unique, and it is worthy of record as indicative of the readiness of right public opinion to give recognition to public spirit.

BLOCKING THEIR OWN GAME.

There is food for reflection on the part of men who make their living about the New Orleans docks in views of the effects of labor difficulties expressed by Mr. Alfred A. M. Heyn, managing director of the Head Line of steamers. He is quoted by the Times-Democrat as follows:

"We are in New Orleans because it is a big shipping port, and because in the past we have made money in the business from here. No ties of sentiment bind us to the port, however, and in this we are only like all the other lines that center at New Orleans. It is business entirely with us, and that is the only light in which we consider the question. When, through labor troubles, we are unable to ship from this port with profit, we will seek some other port. We formerly operated a line into Baltimore, but labor troubles drove us from that city. The labor troubles in New Orleans may succeed in repeating the experience in this city. We have been running between fifty and sixty steamers

every year to this port, but have been giving more and more of the trade to Galveston, and in the event of a prospect of continued trouble here, we will give still more to that port."

Fortunately, the latest trouble at New Orleans has been adjusted. But the laborers have been shown by Mr. Heyn that they may overreach themselves and by making extravagant demands may destroy the opportunity for their employment.

THE SOUTH'S INDUSTRIAL GROWTH.

Speaking of the facts set forth in his report and of industrial conditions generally throughout the Southern States, President Samuel Spencer of the Southern Railway Co. said in a recent talk in the Atlanta Constitution:

"The industrial growth of the South has been remarkable. While the development for the year ended June 30, 1902, was quite unprecedented, the last year exceeded it by 17 per cent. In the capital invested in traffic-producing industries on the Southern Railway system proper. In the year previous such investments were very generally of the character of new enterprises involving the purchase of premises and the erection of factory buildings, while during last year investments were more strictly in mine, factory and mill equipment designed to increase capacity of output. Investments of this character along the Southern Railway lines were very much greater last year than the year previous, and, of course, that implies a correspondingly heavier tax upon the physical capacity of the railroad to move the traffic. During this last year the increased investment in coal mines, iron mines, lumber mills, woodworking plants and other closely-related interests, which are the producers of largest tonnage, was even more marked than in other classes of industrial enterprises."

"This gives an indication of the traffic requirements imposed upon the railroads in addition to the usual crop movements, and emphasizes the importance of the fullest co-operation of all interests in every way possible to relieve a possible transportation congestion. This congestion is not limited to the South. It is more or less general throughout the country; but in the South, where the industrial awakening has been relatively the greatest in a short space of time, the situation has been more difficult to forecast and to reasonably provide for than in other sections where industrial changes have been more gradual."

ANOTHER WATER-POWER DEVELOPMENT

New water-power-electrical enterprises continue to be announced in the South, where a number of valuable properties have already been utilized and others are in course of development. Capitalists have been formulating plans for this latest project for some months past, and the details are now announced. Charter has been obtained as the Winding Shoals Electric Power Co., capitalized at \$500,000, of which amount \$400,000 is to be issued in bonds which have been subscribed by Eastern capitalists. The riparian rights have been secured. They are located on the Chattahoochee river near Buford, Ga., where more than 6000 horse-power can be obtained. This estimate is based on the lowest stage of the river ever recorded. The dam will be of the crib type, requiring more than 1,000,000 feet dry rubble and sawed lumber. More than 6,000,000 feet of sawed lumber will be used in all the work. At Atlanta the company will have a substation for reducing the electric current to a lower voltage for transmission into the city. J. W. Peterson has been in charge of the

engineering work and surveys so far, and will be chief engineer in charge of all the construction. All necessary contracts will be awarded in the near future. Geo. W. Winslow of Chicago is president of the company; W. W. Gorham, also of Chicago, vice-president, and D. W. Standcliff of Atlanta, secretary-treasurer. Various industrial enterprises are to be supplied with power, the company having already contracted to furnish electricity for operating the Atlanta, Buford & Gainesville Railroad, an interurban line about to be constructed. The Electrical Equipment Co., 939 Monadnock Building, Chicago, of which J. W. Peterson is president, has charge of the plans and specifications, and will soon be ready to receive bids on construction work and furnishing the machinery.

FINE TOBACCO FOR TEXAS.

Mr. L. H. Shelfer, the government expert who has been investigating the practicability of raising fine tobacco in Eastern Texas, is quoted as announcing that there are three sections of the State that can grow a cigar leaf of commercial value. In the red or chocolate belt, in his opinion, can be produced the highest grade of Cuban filler that can be raised in the United States, and by the use of cheesecloth shade as fine a wrapper as is grown in Cuba under shade. The sand alone will also produce a grade of filler tobacco, and the gray sand alone is more adapted to the culture of the Sumatra wrapper. Climatic conditions are favorable, and these soils lie within 50 to 150 miles of the Gulf. The suggestion of Mr. Shelfer that the government having made this demonstration, the people should put it to practical use, is an excellent one, and should be promptly adopted.

Mr. Shelfer goes further and urges the people around Nacogdoches to enter upon the manufacture of tobacco. He quotes from the Gadsden County Times, published at Quincy, Fla., the statement that in Quincy 2000 persons, mostly negroes, are employed in the tobacco-packing warehouses at wages aggregating \$15,000 a week, and he added:

"Now, I wish to emphasize the point that the production and manufacture of tobacco gives employment to a class of labor that cannot be utilized profitably in hardly any other channel. There is no opportunity for vagrants in a town that has a small tobacco factory. A town, to be prosperous and self-sustaining in spite of drouth and other calamities, must build factories to consume the raw material and convert it into articles of usefulness and staple commodities, thus giving constant and remunerative employment to labor that must live and spend its earnings at home. 'Diversification and home industry' is the magic sesame that must unlock all the hidden treasures of East Texas as well as elsewhere."

Mr. Shelfer further said that the boll-weevil might be a blessing in disguise in forcing the people to turn their attention to raising tobacco and other crops instead of making cotton the sole money crop.

FOR CLEAN STREETS.

The Evening Chronicle of Charlotte, N. C., has started a campaign for cleaning sidewalks. Charlotte is one of the Southern cities eminently typical of the progressive South. It has developed its industries to a wonderful degree; it has been foremost in promoting good roads and good schools, and yet, according to the Chronicle, it is decidedly backward in the matter of cleanliness of streets, sidewalks and back yards. In that respect Charlotte is by no means exceptional. But that fact should not cause it to hesitate about leading to hasten the

work of reformation. More than ever before there is a necessity for Southern communities to present as attractive an appearance as possible. In recovering from the wreck of a generation ago such details may have of necessity been overlooked. Now, with homeseekers and investors turning their steps southward, nothing of the kind should be neglected.

MUSSEL SHELLS FOR BUTTONS.

The arrival at Memphis of a bargeload of mussel shells from the White river in Arkansas leads the Scimitar to speak of the demand for shells by button manufacturers of the North which has set hundreds of persons in Arkansas and two or three thousand on the lower Ohio to dredging for the shells. In many parts of the South these shells abound, and in two or three places a desire has been manifested to encourage the manufacture of buttons near the sources of the supply of the raw material, one plan including the utilization of the waste from the shells in other industries. It seems to be a waste of money, time and energy to employ steamers, small boats and barges in transporting the shells to distant points, when they should be manufactured into buttons nearer home.

Water-Power Available.

Mr. Wm. G. Haynes of 23 East Fourth street, Atlanta, Ga., in a letter to the Manufacturers' Record writes as follows: "In your last issue you stated that some Northern cotton mills were considering the erection of branches in the South. I have a valuable water-power on the Southern Railroad between Griffin, Ga., and Columbus, Ga., from which I can supply a cotton mill with 1500 to 2000 electrical horse-power at \$15 per horse-power per annum, which is about half the power the falls will generate, the other half being already contracted for by a 20,000-spindle cotton mill. The parties interested in the electrical development hesitate somewhat on account of not having customers for all the power. Knowing the price named above for power would be an inducement to a large factory, I thought possibly if I could communicate with some of the mills you referred to I might be able to close a deal with them and so hasten the completion of two more large enterprises for my State."

Tin from Texas.

Dr. Wm. B. Phillips of Texas, who has charge of the preparation of the mineral exhibit of Texas for the St. Louis Exposition, says that the tin ores of the State will excite a great deal of interest. The ores are taken from the east slope of the Franklin mountain, about twelve miles north of El Paso, and occur in well-defined fissure veins, the largest of which has a width of from two to five feet, and can be traced on the surface for a distance of 1200 feet.

Alloys and Hack Saws.

Charles A. Scott, Granite Building, Rochester, N. Y., writes the Manufacturers' Record that he is desirous of obtaining the name and address of the manufacturer of the hack-saw blade called the "Horseshoe Brand." He also wants to buy at wholesale rates the alloy termed "Magnalium."

Openings in Scandinavia.

C. F. M. Knudsen, 4 Holloendervej, Copenhagen, Denmark, writes to the Manufacturers' Record that, having large business connections in Scandinavia and importing office furniture and typewriters, he is anxious to have illustrated catalogues and closest wholesale prices of American exports.

SUBSTANTIAL FEATURES OF TEXAS OIL PRODUCTION.

[Special Correspondence Manufacturers' Record.]

Beaumont, Texas, October 10.

The most striking feature of the Texas oil situation today is the absence of the boomer and the elimination of stock-jobbing operations. With the loss literally of millions of dollars through injudicious investments in enormously-capitalized and often badly-managed corporations, it is small wonder that outsiders are chary of oil speculation, and although there are those who maintain that never have the possibilities been so great for safely and profitably engaging in the oil business here, it is yet true that the field today is almost entirely left to the operator, and appeals to the general public to take a flyer in oil are meeting with no cordial response. That this is due in part to a lack of general information as to the vast extent of the Texas-Louisiana field and the practical permanence of the oil supply there is probably no room for doubt, and it is this feature of the case which furnishes holders of lands in promising and developing fields with the belief that some day the public will again be strongly attracted by conditions here, and investments in propositions of unquestionable merit will freely follow.

While the records and the fields are strewn with the wrecks of fortunes and investments of overzealous speculators, the fact remains that a vast oil industry has been established on a basis of permanency, and it is also true that money in large quantities has been and is being made all over the field. Beaumont itself has been benefited enormously, the taxable valuation having gone from about \$4,000,000 in 1900 to more than \$25,000,000 at the present time, and instances are numerous where men have made and retained thousands and even hundreds of thousands of dollars. Beaumont is dotted with fine new brick and stone buildings, every one a monument to the money which the oil boom made and left behind, and while there are reams of oil stocks the country over which could only be sold by the pound as waste paper, there have been and are some few dividend-payers among the bunch, and furthermore the production, refining and marketing of oil has been reduced to something like an exact science. There is "wildcatting" or prospecting going on all over Texas and Louisiana in every likely and many unlikely places, and at Sour Lake, Saratoga and such fields as have been demonstrated to be fine producers local men and speculators are among those who are driving wells and taking a chance; but more and more the oil business is drifting into strong hands and under the control of men and corporations who are strictly business. There will be less money made and much less lost by the public at large, and it remains to be seen whether this will not be a distinct advantage to the field. But with careful business management of the oil industry as the rule it looks like the investing public would be assured of greater safety in the future, and that such assurance could scarcely be otherwise than advantageous to the entire section must be conceded. Therefore the drifting of the business into a few hands may not prove to be an altogether unmixt evil. With the gradual exhaustion of the oil fields of the North it is certain that the steady development of the Southern fields will proceed. Carefully-made investments should therefore bring satisfactory returns, and it would seem that the public still has an excellent chance of getting a share of the profits in Southern oil where the character and ability of company managers is assured.

The petroleum world is beginning to know something definite about Texas oil, and its worth and possibilities are now firmly fixed. Only so recently as October of last year a report of the United States Geological Survey declared the consensus of opinion among chemists who had examined the coast field to be that the oil was unsuited for the production of illuminating oil; that it was doubtful if it could be made to yield a good lubricating oil on a commercial basis, and that its value as a source of asphalt and gas oil was yet to be determined. Today great refineries, among the largest and best-equipped in the world, are producing all of these articles on a basis altogether satisfactory to the trade and profitable to the companies. While Texas coast oil is uniformly heavy, ranging from 24 to 10 degrees Baume, and the percentage of illuminants and volatiles is therefore necessarily lower than of Pennsylvania oils, it has been found that this oil presents no difficulties of refinement, and in some respects it surpasses the Northern oils. The refineries produce gasoline and illuminating oil of as good quality as comes from Pennsylvania oil, while the lubricants are even better. Having an asphaltum base instead of paraffine, lubricants from these oils stand the cold test better than those from Northern oils, the Southern lubricants flowing freely at a zero temperature. Experiments have shown the possibilities of producing superior dynamo and machine oils as well. Indeed, experimentation has by no means been concluded, and while it has been demonstrated that the grades named can be profitably produced, it is not doubted that still further refining is possible and that the treatment of Southern oils will become a constantly increasing and highly profitable industry.

The first refinery in the field to begin operations was that of the J. M. Guffey people. It is located at Port Arthur, and is now known as the Gulf Refining Co. It has thirteen batteries of four 800-barrel stills, each for illuminating oil and the lighter products; nine 1200-barrel stills for reducing and for lubricants, and sixteen 120-barrel stills for making different grades of asphalt. No difficulty is experienced in making sales of the asphalt products in large quantities, a proof of the excellence of the material. It is being used for roofing, saturating, street paving, pipe dipping, for paints and varnishes; in fact, for all the uses to which foreign asphalt is put. This refinery has been marketing products since November, 1901. It has been extending and improving the plant from time to time, and is not through yet. At the present time 400 hands are employed, and the refinery is running to its full capacity. Recently this refinery shipped 63,000 barrels of reduced oil from Port Arthur to a foreign port, and it has just shipped a full cargo of refined petroleum to New York. The general offices of the company are in Pittsburgh.

At Beaumont is the extensive refinery of the Security Oil Co., formerly known as the Burt refinery. It has been commonly understood that this is a Standard Oil property, but this ownership is not conceded by the local management. By these officers it is stated that Pennsylvania and West Virginia oil men are the owners. The company has \$3,000,000 capital, employs 250 hands, and has an equipment of five batteries of ten 800-barrel stills. Illuminants, solar oil, benzine, naphtha, etc., the usual products of a well-equipped refinery, are turned out here.

No asphalt is produced, and it is not at present contemplated to treat the oils for asphalt. It is agreed that this work is at present not beyond the experimental stage, although the plant is being profitably operated to about its capacity, but the oils being new to the trade, it is proposed to keep on trying till it has been demonstrated that the best possible results are being obtained. It is declared the Texas oil presents no difficult problems; it is simply a different proposition, and one which it will take time to thoroughly work out. The Security Company owns ninety acres of ground, and the buildings and all features of the plant are models of their kind. Coffeyville (Kan.) brick are used in the construction; the roofs are steel truss, tile covered, and the fire-brick used is of the best St. Louis make.

These are the large plants, but there are others, either under way or in operation, which add to the importance of the industry. Among them are those of the Texas Company, Port Arthur; the M. C. Williams Colonial Oil Co., Port Arthur; the United Oil & Refining Co., the Union Oil Refining & Fuel Co., the National Refining Co., the Great Southern Refining Co. and the Central Asphalt & Refining Co. of Beaumont. The Great Southern, which has three stills of 200 barrels each, and turns out 100 barrels of various grades each day, has a patent process by which the oils are separated in the vapor state. A run is made in nine or ten hours, and eight runs are obtained in a week.

The Central Asphalt & Refining Co., the institution of which Senator Chas. A. Towne was at the head, and which was organized to utilize a secret process, is now in the hands of a receiver. The others are either in operation or are preparing to operate in a more or less extensive way.

Of the oil-producing companies now in this field, the bulk of the business is done by the J. M. Guffey Petroleum Co., the Texas Company, the Higgins Oil & Fuel Co. and the Heywood Oil Co. Of the 15,000 to 18,000 barrels of oil produced daily on Spindle Top, the Guffey Company probably produces from 10,000 to 12,000. Owners of the original Lucas gusher, they have been continuous producers since the field was brought in. They have holdings of 3000 acres on the hill, and, unlike the ordinary run of producers here, they operate almost exclusively on royalties—one-eighth and one-tenth. Their holdings on Spindle Top surround the pepper-box which frantic outsiders made of a portion of the hill, and they go ahead putting down new wells only as occasion justifies. They frequently strike a gusher still, and of their thirty producing wells on the hill, some of them are now flowing from 600 to 1000 barrels a day. The original Lucas gusher, by the way, is long since a thing of the past, and not even a tablet marks the site of its former grandeur. It had a life of some fifteen months, and after producing 2,000,000 barrel of oil or more it got choked up and was abandoned.

The Guffey Company has a lease on 800 acres at Sour Lake, on which are nine wells, two or three of them among the good ones, but it is not drilling actively there now. Through its own pipe line it is running 600 barrels of oil per hour out of Sour Lake, some of which it contracted for at the time of low prices at ten cents a barrel. It owns in fee-simple forty acres in the heart of the proven territory at Saratoga, but is not drilling there yet.

The company owns fourteen iron tanks at Spindle Top, with a total capacity of 666,000 barrels. At Port Arthur it has twenty-one tanks, with 1,160,000 barrels capacity. It has two 25,000-barrel tanks at Sour Lake, and is building nine others

there of 55,000 barrels capacity each. It has twenty miles of six-inch pipe line from Spindle Top to the Gulf Refinery at Port Arthur, and has a lease on the National pipe line, covering the same ground. It built the first pipe line into Sour Lake from Lucas Station (Spindle Top), twenty-four miles in length, and is surveying a line into the Saratoga field, ten and one-half miles beyond Sour Lake. It owns fifteen steamers, which run from Port Arthur to London and New York, or anywhere desired. Two of them are the finest afloat, with 34,000 barrels capacity each. It also owns a barge which carries 40,000 barrels. It has forty tank cars in service here, and sixty which have been sent north. It has a station at Bayonne, N. Y., for storage and distribution, and is building another at Boston.

In addition, this company has just secured at a bargain control of everything belonging to the Star Petroleum Co., a ten-million-dollar organization that has spent some \$2,000,000 in the field. These properties and equipments, for which only \$300,000 was paid, include some thirty-five miles of pipe line, twenty-five producing wells, fifty tank cars, loading racks, rigs, storage tanks, etc., an enumeration of which recently appeared in the Manufacturers' Record.

J. M. Guffey is president of the company, and his associates, including W. L. Mellon, vice-president; R. B. Mellon, treasurer; George L. Craig, general manager; and C. F. Farren, secretary, are mainly Pittsburg people, although the large list of stockholders includes people from all over the country. The company is capitalized at \$15,000,000, and there is an issue of \$5,000,000 bonds. No dividends have yet been paid stockholders, but the assurance is given that when the property has been more completely developed and the point reached where dividends are in order, something like 50 or 100 per cent. may be declared.

It is well to bear in mind that all this enormous property has been created since the Lucas gusher was struck, January 10, 1901. At that time there was not a foot of pipe line here, not a tank car, tank steamer or even a storage tank that could be utilized. In addition to this company's holdings and equipment, some twenty-eight other companies have steel tankage in Texas alone with a total capacity of over 10,000,000 barrels; the earthen tankage in the Texas field will foot up over 5,000,000 barrels; there have been shipments by boat of over 10,000,000 barrels from Port Arthur and Sabine Pass, and there are being produced in the Texas-Louisiana fields today at least 80,000 barrels of oil every twenty-four hours. With the developments at Sour Lake, Saratoga and Jennings, and the prospecting which continuously goes on, it is likely that this production will be maintained, if not increased, for an indefinite number of years. Is it any wonder, then, that the Texas people, who know these things, are surprised that the investing public, once so eager to grasp at the promise, should show apathy now, when so much has been fulfilled?

ALBERT PHENIX.

The cottonseed-oil mills of Memphis have begun their season with bright prospects. The seed already put upon the market has been of good quality, and the season opened with prime crude oil quoted at thirty-one cents, against twenty-nine cents the same period last year.

Plans are being made for the union into one body of the various rice-canal interests of Texas, which have invested several million dollars in extending the rice-growing territory of the coast country.

MINING IN THE SOUTH.

Opportunities Still to Be Seized in the Piedmont Region.

Editor Manufacturers' Record:

There lies at the southwest end of the Blue Ridge mountains a region so rich in minerals, so far as surface indications are concerned, that it is beyond belief that the attention of the mining world has not been attracted to it before. This district is nearly equally divided by the line between North Carolina and Georgia, and besides being covered with a magnificent growth of timber, it is prolific in outcroppings of mineral-bearing ore. The minerals include gold, copper, nickel, iron, asbestos, corundum, talc, marble, chromate of iron, titanium and others. True it is that the greater part of the showing is only on the surface, but these surface outcroppings are so large and extend throughout the region in such regular formation for many miles as to leave no possibility of a doubt that huge bodies of pay ore can be uncovered within a reasonable depth at comparatively little expense.

To commence with the precious metals. Gold mining has been carried on for many years in Northern Georgia, and I am sorry to say the results have not been as satisfactory as could have been wished. But the fault does not lie at the door of the auriferous deposits, but rather at that of the promoters of the various schemes. The fact that a paying placer mine has been found does not warrant the erection of an expensive mill the moment that the vein of quartz, which was the mother of the deposit, has been uncovered. This mistake, due to ignorance of geology, has led to many failures in quartz mining. For ages past this region has been subject to erosion, and it is universally acknowledged that the surface of the Blue Ridge range has been scraped off to a depth of at least 30,000 feet. (Some geologists claim 60,000 feet.) At any rate, whatever the depth, the gold, by reason of its great specific gravity, remained in the gulches and streams, while the lighter particles of the country rock and vein matter were washed down to the Gulf of Mexico, or rather to the old ocean which now forms the States of Mississippi and Alabama.

Another cause of failure in many instances has been a too great hurry in getting returns from the investment, resulting in the erection of the wrong kind of reduction works. Nearly all the mills now standing idle are of the free process kind, where nothing but copper plates and quicksilver are used to save the values, whereas either cyaniding or chlorination mills should have been erected at the commencement. Many mills have been built before any mines were discovered. This does not only apply to gold; witness a \$250,000 failure where something like that sum was thrown away on a so-called corundum proposition.

In spite of all these setbacks, there is an enormous amount of gold ore awaiting removal and reduction in this section, and all that is needed in order to ensure success is simply "mining on a business instead of a speculative basis." There are many fine opportunities now open in this section. A personal visit of inspection will do more than all the correspondence in the world, and I will undertake to ride over the country with any engineer or expert who shall take the time to visit this country.

There are at least two great copper-bearing zones running through this region. The ore is principally a pyrite, bearing indications of secondary enrichment in the form of chalcocite. The outcroppings are strong, and bear well in the red metal.

The ore can be easily concentrated, and water-power is always available. Good tunnel sites are plentiful, and all outward indications point to the possible formation of a prosperous mining district.

A large, well-defined vein of nickel ore, accompanied by a parallel vein of manganese, runs for miles through Union and Towns counties. This nickel is high grade, and rich enough to haul to the nearest railroad point. Considering the high price of this metal, there is abundant opportunity for any independent manufacturer of steel to avail himself of a supply of nickel. The properties, of course, are all owned, but I believe the terms are reasonable.

There is no doubt that a railroad connecting Blue Ridge, Ga., with Atlantic coast towns will be shortly built through the center of this rich district by the end of 1904.

In the neighborhood of Young, Harris and Blairsville are huge deposits of bauxite, from which metallic aluminum is manufactured. The ore is of the same nature as that from Western Georgia, which the Norton Emery Wheel Co. utilizes for the manufacture of aluminum at Niagara Falls. In addition to the bauxite, this region contains the few good corundum deposits which are not already controlled by the abrasive trust. The corundum mining industry has received somewhat of a black eye in this neighborhood by reason of the fact that some mills have been built by people who could not tell corundum from chalk on lands which did not contain the mineral. Besides that, prospectors who knew naught of minerals have been bothering the manufacturers all over the country by sending in batch after batch of albite, margarite, oxide of titanium and other crystalline rocks to be tested for corundum. Nevertheless, there is plenty of corundum in paying quantities awaiting development. The Colorado Corundum Co. is developing two promising looking properties, one in Clay county, North Carolina, and the other four miles to the southwest in Georgia. There are three veins of corundum bearing strata, all running parallel to each other (northeast to southwest), of which that on the north is the best. This mineral is quoted at from seven to ten cents per pound, and there is a continual demand for it, in spite of the report that the artificial product called corundum has taken the place of the natural abrasive. All that is necessary to mine corundum successfully is to avoid "wildcat schemes," to mine intelligently along business lines, and to beware of erecting a mill until at least a three years' supply of ore is guaranteed by development. All of which is easy if the rules are only followed. The abrasive trust controls many mills along these veins, but work is only being pushed at a few locations, it apparently being the policy of these people to decrease production in order to keep up the price to the consumer. Nevertheless, there are thousands of tons of corundum yet to be found in North Georgia.

I neglected to state in connection with my remarks on gold mining that there are several promising placer mining propositions yet awaiting development here, where the yellow metal can be washed from the gravel with a very small outlay at the commencement.

A. M. GRAHAM.

Hiawassee, Ga.

The Atlantic Coast Lumber Co. shipped last week from Georgetown, S. C., 300,000 feet of lumber for Bathurst, on the west coast of Africa.

During September Florida phosphate rock shipped through Savannah, Ga., for foreign ports amounted to 18,677 tons.

RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

HOUSTON TO SOUR LAKE.

Mr. Ed Kennedy Describes His Proposed Electric Railway.

Mr. Ed Kennedy writes from Beaumont, Texas, to the Manufacturers' Record concerning the proposed electric railway between Sour Lake and Houston, Texas, as follows:

"The road is to be known as the Houston, Liberty & Sour Lake Interurban Line, covering a distance of fifty-seven miles, or eight miles less than the distance on the Southern Pacific between those points. The starting-point is Houston, a city of 100,000 people. For the first ten miles east from Houston the line runs through one of the finest truck-farming countries in the world that is developing very rapidly; the next ten miles is through a fine pine forest, but as yet none of the timber has been cut; then for the next ten miles it runs through the rice belt, one of the greatest rice centers in the world; then comes Liberty, the county-seat of Liberty county, a place of 3000 inhabitants. The line will also hit other towns with a population of from 500 to 1000 people. From Liberty the line runs northeast, leaving the Southern Pacific to the south. This is also a good rice country and truck-farming region until we come to Big Hill, ten miles out, where will be one of the great oil fields that will equal Sour Lake or Spindle Top and the great gushers of Russia. There are contracts for ten wells to go down at an early date. Ten miles further east brings us to Sour Lake, a city of 7000 population—a thriving place that is just in its infancy.

"At Sour Lake connection is made with the Beaumont & Sour Lake electric road, and also with the Saratoga line that is going to be built. The tracklaying on the Beaumont-Sour Lake line is progressing just as fast as men and money can make it. This line was promoted by me, but it has no connection with the new plan, only it will be a good feeder for my road, and the Houston line will also be a good feeder for the Beaumont & Sour Lake road, which will connect up all the leading towns, of which Beaumont stands in the lead, a thriving city of 30,000 population, with seventeen passenger trains every twenty-four hours, and also with one of the greatest refineries in the world that is running night and day. There are also seven saw-mills running night and day tributary to the city, and massive brick buildings are going up seven and eight stories high. It is a great rice center, where there are mammoth rice mills that pay the top price for rice, four national banks, and all doing a good progressive business.

"As for the right of way, I have that secured for pretty much all of the way. The line will be built in first-class shape. There is plenty of gravel along the track for ballast, and timber sufficient for bridging and piling. There will be 72-pound T rail used, and the track will be built for the traffic—passenger, freight and express. The bonds have been contracted for, and will be handled by the Municipal Bond & Securities Co. of Cincinnati, Ohio."

Eureka Springs to Huntsville.

Mr. J. A. C. Blackburn of Rogers, Ark., writes the Manufacturers' Record concerning the plan to build an electric railway from Eureka Springs to Huntsville, about thirty miles. "The road," says he, "can be built very cheaply, as it follows a dividing ridge for almost the entire dis-

tance. Only one bridge will be necessary. It is also contemplated to extend the road fifty or sixty miles further southeast beyond the head of Buffalo. It is estimated that the line will pay well, as it will open up a fine timber and fruit belt."

WABASH EASTERN LINE.

Sub-Contractors on the Cumberland and Cherry Run Connection.

On the line to connect the West Virginia Central and the Western Maryland Railroad between Cumberland and Cherry Run work has begun about four miles east of Cumberland, Md. The sub-contractors from Cumberland eastward are as follows: Cumberland to Welton tunnel, Doyle; Welton tunnel and seven miles east, M. Elmore; then come the Walz-Reese Construction Co., J. W. Kouckles, N. Roman, C. H. Locher, M. J. Moran and Patrick Gibbins, the subcontract of the latter extending to Sideling Hill creek, which marks the eastern end of the contract of McArthur Bros. and the Kilpatrick Bros. and Collins Construction Co. The contract of the Degnon-McLean Construction Co. extends from Sideling Hill creek to Cherry Run.

Between Cumberland and Sideling Hill creek eight bridges will have to be constructed at different points over the Potomac river. These structures will average 600 feet in length, with three piers in addition to the abutments. There will also be five tunnels of varying lengths, as follows: Knobley, 750 feet; Stickpile, 1700 feet; Kessler, 1200 feet; Stickpile, 1700 feet, and Indigo, 4300 feet. The latter will be near Little Orleans. The bridge work has been sublet to Winston & Co. and Locher of Massachusetts, but McArthur Bros. themselves will do considerable of the tunnel work. Between Sideling Hill creek and Cherry Run, on the contract of the Degnon-McLean Construction Co., it is stated that there will not be any tunnels, and but few heavy cuts.

After the Ashland Belt Line.

According to advices from Huntington, W. Va., the Cincinnati, Hamilton & Dayton, the Detroit Southern and the Chesapeake & Ohio lines are each endeavoring to secure control of the Ashland Coal & Iron Railway Co. of Ashland, Ky., which has a belt line around that place and has twenty-two miles of line from there to Boyd county, where the company owns 25,000 acres of coal and iron lands.

It is further reported that a syndicate composed of Robert Peebles, J. A. Kelley and Col. Frank C. Cates of Ashland, John Peebles of Portsmouth, the Joseph C. Butler heirs of Cincinnati and others have acquired a majority of the stock. The annual election is to take place on October 21.

Should the Cincinnati, Hamilton & Dayton or the Detroit Southern obtain possession of the Ashland Coal & Iron Railway Co., it is believed that they would extend from Ironton, Ohio, to Ashland, and thence along the Big Sandy river to a point in the coal region of Eastern Kentucky, where the Northern Coal & Coke Co. will, it is stated, construct an immense coke plant. The Chesapeake & Ohio is already building a line to serve this new enterprise.

The Frisco's Progress.

Vice-President Winchell of the St. Louis & San Francisco Railroad, who is also general manager of the system, is quoted as saying that the company is now receiving the first of a lot of 100 locomotives ordered some time ago, which will increase the daily mileage of freight cars about 20 per cent., which would be equivalent to adding nearly 5000 cars; the

empty mileage has been cut down to less than 30 per cent. Concerning the Kansas City & Birmingham division, Mr. Winchell says the westbound tonnage is a little heavier than the eastbound, and that the company has felt no reduction in the movement of pig-iron. The Birmingham district is a direct producer of various kinds of manufactured freight, and the Frisco carries West much pig-iron bound for Chicago. He further says that the St. Louis, Memphis & Southeastern between Cape Girardeau and St. Louis will be finished by the end of the year.

"Cotton Belt" Report.

The twelfth annual report of the St. Louis Southwestern Railway Co., "Cotton Belt," including the company's lines in Texas, shows for the year ended June 30, 1903, gross earnings \$7,278,574, an increase of \$11,315 as compared with the next preceding year; operating expenses \$5,256,163, increase \$83,006; net earnings \$2,022,411, decrease \$71,781; all other receipts \$182,602, increase \$93,583; total income \$2,205,013, increase \$21,802; surplus after payment of interest, rentals, taxes, etc., \$694,834, decrease \$33,354. The balance to the credit of net income as shown by the profit and loss account is \$1,677,098, an increase of \$219,081.

It is stated that the increase of more than 1½ per cent. in operating expenses was due in part to rainy weather, which required the employment of extra gangs to keep the track in condition, but the principal cause of the increase was a large expenditure for labor in putting in heavier rail on 272 miles of line. The higher cost of labor and supplies also contributed to the increase.

During the year the company completed its Dallas branch from Noell Junction to Dallas, Texas, a little over twelve miles, and it also purchased control of the Dallas Terminal Railway & Union Depot Co., with nine and one-half miles of track. It has enlarged and extended the yards and erected new passenger and freight station buildings. The Texas & Louisiana Railroad from Lufkin to Monterey, Texas, twenty-two miles, was also acquired, and an extension of about four and one-half miles is now being made.

Mr. F. H. Britton, vice-president and general manager, says in conclusion:

"The growth of the country tributary to the company's rails during the past year has been very noticeable. The management has given due encouragement to immigration, as well as to new enterprises locating in the territory served by the system, and good results will follow a continuance of this policy. Fruit and vegetable growing along the line is now carried on extensively under the direction of expert agriculturists, and with marked success. The natural resources of the section traversed by the line, which are susceptible to further development as the country expands, insure a stable traffic movement for the future.

"The outlook for business during the ensuing year is quite satisfactory at this date. Encouraging reports of the coming cotton crop have been received from the heavier producing sections along the line, and except for some slight losses in a few counties in Texas from the ravages of the boll-weevil, the crop bids fair to exceed those of the past few years."

Atlanta to Marietta.

The Atlanta & Marietta Electric Railway Co. has been granted a franchise to build an electric railway between Atlanta and Marietta, Ga., about eighteen miles. The line is to run along the Howell Mill road from the city limits of Atlanta to Rossers Store, five miles, and thence to

Marietta. Work is to begin within six months, and the road is to be completed within eighteen months. Bridges are to be built over the Seaboard Air Line tracks and also over Peachtree creek. In addition to conveying passengers the railway will be permitted to transport freight, and also to conduct an express service. Rights of way have been secured from a number of property-owners in Fulton county, and the deeds conveying them to the railway company have been filed. Deeds for the right of way in Cobb county are also to be filed there. Frank L. Cooke of New York, W. R. Powers, attorney, of Marietta, Ga., and B. M. Hall of Atlanta, engineer, represented the company before the county commissioners when the franchise was granted.

The Atlanta Interurban Railway Co. is also to build a line from Atlanta to Marietta, and has some of its grading completed.

A Valuable Book.

The Official Guide of the Central of Georgia Railway Co. is a most attractive book of about 250 pages, abounding in valuable information concerning the industries of the States traversed by the system. Under the caption of "Southern Opportunities for the Investor and Settler" is presented a richly-illustrated description of many of the manufacturing, agricultural and commercial advantages in the company's territory. The illustrations, which are superior half-tones, include scenes in Savannah, Augusta, Macon, Atlanta, Birmingham, Athens, Montgomery, Columbus, Rome and Chattanooga, and in many towns in the intervening country. The iron and steel, the coal and coke, the cotton, the agricultural and other industries are all represented in the pictures. The volume is handsomely bound in red cloth, with the name of the company in gold lettering upon the cover.

Royal Blue Book.

The Book of the Royal Blue for October presents another article on the Louisiana Purchase Exposition, this one being devoted to an illustrated description of the machinery building. The new union station to be erected at Washington, which is another great structure in the plans for which the public is generally interested, is also described, and two pictures, one of the interior and the other showing the exterior of the depot as it will appear, accompany the reading matter. There are two other very interesting articles, one describing the historic city of Frederick, Md., with pictures of the Key Monument and scenes in and around the city, and the other being devoted to the equally historic village of Bladensburg, near Washington, D. C. Several other entertaining contributions in prose and verse complete the book.

A Georgia Line to Extend.

The Albany & Northern Railroad has amended its charter to permit of an extension being made from Cordele to Jeffersonville, Ga., via Hawkinsville, a distance of sixty miles. The Albany & Northern now extends from Albany, Ga., northeast to Cordele, which is a junction point of the Seaboard Air Line, the Georgia Southern & Florida and the Atlantic & Birmingham roads. If extended northeast via Hawkinsville to Jeffersonville it would connect at Hawkinsville with the Southern Railway, the Wrightsville & Tennille and the Hawkinsville & Florida Southern. Jeffersonville, the proposed northern terminus, is on the Macon, Dublin & Savannah Railroad. T. Edward Hambleton of Baltimore is president of the line.

May Soon Build.

George H. Blackwell, contractor on the South & Western Railway, is reported as saying that work may soon be started on an extension northwest from Johnson City, Tenn., towards the Virginia coal fields. If extended northwest to Gate City, a distance of twenty-five or thirty miles, this line would make a connection there with the Virginia & Southwestern Railway, which extends as far as Big Stone Gap, whence a comparatively short road would reach the Tom's Creek region, in the mines of which Mr. George L. Carter, president of the South & Western, and associates are interested. Mr. Carter is also a director in the Virginia & Southwestern.

Railroad Notes.

Howard Gould has been elected a director of the St. Louis Southwestern Railway to succeed Thomas T. Eckert, resigned.

The completion of the Indian Territory Traction Co.'s line and its opening to the public is announced at South McAlester. Extensions are, however, to be built. Lawrence P. Boyle and others are interested.

The Tennessee Central Railroad has completed its line between Nashville and Clarksville, and as soon as the bridge over the Cumberland river at Nashville is finished trains will run through between those points.

Vice-President J. T. Harahan of the Illinois Central Railroad says that eighty-five new engines have been ordered, many for delivery this fall and all to be received by May 1 next. The double-tracking of the road is being pushed.

An unconfirmed report from Hawkinsville, Fla., says that the Brunswick & Birmingham Railroad has purchased the Hawkinsville & Florida Southern Railway, and proposes extending it to Perry, a distance of eighteen miles.

The purchase of the Tennessee Northern Railway by the Knoxville & Ohio Railroad, which is the Southern Railway system, has been ratified. This extends the main line ten miles to LaFollette, Tenn., and through valuable mineral land.

President J. T. Jones of the Gulf & Ship Island Railroad writes from Gulfport, Miss., to the Manufacturers' Record denying the report that he is interested in the Natchez & Gulf Railroad. He says that it is entirely without foundation.

A dispatch from Vinita, I. T., says that a railroad is to be built from South McAlester, I. T., to Vian, on the St. Louis, Iron Mountain & Southern, and thence to Joplin, Mo. Neither the name of the company nor the names of those interested are given.

A railway survey is reported to have been made from Mendota, on the Virginia & Southwestern Railway, northeast along the Holston river to Narrows, on the Norfolk & Western Railway, about 107 miles. The line passes through valuable timber and mining properties.

Vice-President Julius Kruttschnitt of the Southern Pacific Company says that it has received all except twenty out of 106 locomotives ordered; also that about one-half of a lot of 125 passenger cars have been delivered, and that 4500 freight cars have lately been added to the equipment.

The Eufaula Railroad Co. has been granted a franchise at Eufaula, Ala. It is proposed to build a line as far as Abbeville, twenty-five miles, in addition to building an electric railway system in the city. The company is composed of J. P.

Foy, B. B. McKenzie, R. A. Ballowe, C. A. Martin, H. C. Holleman and L. H. Brassell.

The Baltimore & Ohio Railroad is to begin using the Pinto cut-off, which will avoid running through freight trains via Cumberland, Md., and will also save twelve miles in distance, as soon as the new shops and roundhouse are built at Keyser, W. Va. These buildings are to be completed within a few weeks. The roundhouse will have twenty-four stalls.

The incorporation of the Paden City, Middlebourne & Salem Railway Co. of Paden City, W. Va., is announced to build an interurban railway connecting the three towns. It would be about thirty-five miles long. The incorporators are Thos. A. Watkins, George R. Wallace of Pittsburgh, Pa.; Robert Miller, Paden City, W. Va.; George E. Work of Sistersville, and E. L. Robinson of New Martinsville.

The incorporation of the Shawnee & Northeastern Railway of Shawnee, O. T., is, according to a dispatch from Guthrie, where the charter was granted, for the purpose of building a line from Wichita Falls, Texas, to Claremore, I. T., about 300 miles. The incorporators are A. E. Nelson, C. W. Kerfoot, H. G. Beard, B. B. Blakney, W. H. Mabon, W. F. Callahan, M. J. Bentley and D. W. Bell, all of Shawnee.

The Southern Pacific Company is extensively improving its line (the Galveston, Harrisburg & San Antonio Railway) between San Antonio and El Paso. Curves are being eliminated, steel bridges and stone culverts are being put in and wells are being dug at Comstock to furnish water for the locomotives. This work of improvement will, it is stated, be pushed east and west, so that the running time between New Orleans and San Francisco will be reduced eight or ten hours.

American Coal for Europe.

Mr. W. C. Jutte of a Pittsburg firm of river coal shippers, after a trip abroad, is of the opinion that there is a good market for American coal in the Old World, as well as in Mexico and South America. In an interview in the Pittsburg Chronicle-Telegraph he suggested the establishment of a line of coal vessels, and said:

"If some one would operate a line of six-masted sailing vessels, for instance, between American ports and Europe, I think a very profitable business can be established. It does not require a large amount of money to operate vessels of this class, because they do not use fuel and the vessels carry very small crews. This type of vessels hold about 10,000 tons. It costs more money to mine coal in England than it does in Pennsylvania, because the coal is mined under difficulties, some operators there being compelled to bring their coal from 3000 to 4000 feet below the surface. The rapid improvement being made in the method of mining in America is bound to reduce the cost of production, and under certain mining agreements there is no question but that coal can be sent abroad and sold at as cheap a rate as the foreign product with which it would have to compete."

Vehicles for South Africa.

J. R. Wills, Jetty street, Port Elizabeth, Cape Colony, South Africa, writes to the Manufacturers' Record that he is interested in importing American carts, carriages, buggies, etc., and would be glad to see catalogues of American export houses in those lines. He adds that the lack of parcel post arrangements with the United States is a great drawback to trade with Cape Colony.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

Texas' Textile School.

All arrangements have been completed for establishing a school in textile instruction at the Agricultural and Mechanical College, Dallas, Texas. The last legislature provided funds for the erection of this building. Plans for the structure have been accepted as prepared by J. E. Serrine, a leading Southern mill architect, of Greenville, S. C. They show a structure of hard brick two stories high, 54x174 feet in dimension, estimated to cost \$25,000. A complete equipment for manufacturing cotton will be installed, and about 100 students will be afforded instruction. This makes the fifth textile school in the South, the States of North Carolina, South Carolina, Georgia and Mississippi having already established courses in cotton manufacturing, as has been previously detailed from time to time in the Manufacturers' Record.

The Capitola Mill.

Mention was made last week of the incorporation of the Capitola Manufacturing Co. for the purpose of developing water-power and building a cotton mill at Marshall, N. C. Organization has since been effected with W. J. McLendon of Wadesboro, N. C., as president and general manager, and the following directors: Messrs. C. B. Mashburn, N. H. Rice, J. H. White, J. R. Swann, S. Franklin, J. F. Redmon and W. J. McLendon. The company estimates that about 2000 horsepower can be obtained from its water-power property, and the mill will be designed for an equipment of 15,000 spindles and 450 looms. The main building will be 100x200 feet in size. John J. Dalton of Asheville, N. C., has done the engineering work and prepared estimates for the enterprise. The company will be capitalized at \$250,000.

Combed Sea Island Yarns.

Atlantic & Gulf Mills, Quitman, Ga., was mentioned last week as having decided to double its plant, increasing capital from \$100,000 to \$200,000. It can now be stated that buildings will be erected to accommodate the new machinery (over 5000 spindles), but it has not been decided whether they will be built by contract or day labor. Construction work will probably begin in December. The addition will run on combed Sea Island yarns, and, it is claimed, will be the first mill of this kind built in the region where Sea Island stable grows. The present 5000 ring spindles run on upland cotton, making hosiery yarns.

The Cotton Movement.

In his report for October 9 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during the thirty-nine days of the present season was 1,275,244 bales, a decrease under the same period last year of 534,334 bales. The exports were 504,153 bales, a decrease of 316,780 bales; takings by Northern spinners 169,019 bales, an increase of 6549 bales; by Southern spinners 188,945 bales, a decrease of 54,220 bales.

Textile Notes.

John Jennings of Hillsboro, Texas, proposes organizing company to establish a knitting mill at Cleburne, Texas.

Jonesboro Yarn Mills, Jonesboro, Tenn., a \$25,000 plant, is about to resume operations, after an idleness of about five months.

Messrs. Stephen S. Holt, Willis H. Austin and Allen K. Smith of Smithfield, N. C., have incorporated the Holt Cotton Co. to manufacture and deal in cotton, etc. The capital stock is \$100,000.

Messrs. John W. Knight, E. B. Hulsey, V. P. Randolph, B. H. Morehead, J. P. Sugg and H. A. Sugg have incorporated the Tennessee Cotton Co. at Dyersburg, Tenn., with capital stock of \$25,000.

Moore Cotton Mills of Lileadon, N. C., has resumed operations, and contemplates installing some additional machinery, besides a complete dyeing plant. The mill now has 2000 ring spindles and ninety-six looms.

Penant Knitting Mills, Shepherdstown, W. Va., is improving its plant by the addition of new machinery. The company is now employing about thirty operatives and making large shipments of fine hosiery to leading cities.

Williamsburg (Va.) Knitting Mill Co. will increase capital from \$50,000 to \$80,000 in order to enlarge its plant. Messrs. E. W. Warburton and H. S. Bird have increased their holdings of stock and now control the enterprise.

Hazelhurst Cotton Mill Co. of Hazel, N. C., reported incorporated last week, is the incorporation of the Hazelhurst Cotton Mills, an established plant of about 1000 spindles. The capacity is being doubled by the installation of second-hand spinning machinery.

It is rumored that the Merrimack Manufacturing Co., Huntsville, Ala., and Lowell, Mass., will erect additional mills at Huntsville, work to begin next spring. The company is now pushing to completion additional mills to have 75,000 spindles and 2400 looms.

The Farmers' Local Union of Myrtle Springs, Texas, has recently adopted a plan to establish cotton mills. The system comprises a series of fractional payments by each subscriber as the work on a mill progresses. No arrangements have been completed for the first plant.

A woolen goods manufacturer of Springfield, Mass., has addressed the Board of Trade at Little Rock, Ark., relative to establishing a woolen mill in that city. Possibly the manufacturer in question will remove his established plant to form the nucleus of the new enterprise.

Columbia Manufacturing Co., Ramseur, N. C., will enlarge its cotton factory. An additional building, two stories high, 50x88 feet, will be erected and equipped with machinery for manufacturing colored goods, plaids, etc. The company's present plant has 11,072 spindles and 350 looms.

Knoxville (Tenn.) Knitting Mills Co., mentioned last week, has increased capital stock to \$50,000 and will enlarge its plant. Contract will be awarded for the installation of 150 additional knitting machines, with ribbers, loopers, etc., to match. The output is fine underwear, ultimate capacity to be about 3000 dozen per day.

The reports regarding South Carolina capitalists having decided to develop Bull Shoals Shoals, near Tocon, Ga., arose from the fact that a well-known cotton manufacturer of South Carolina has purchased water rights on the Carolina side. There is no present intention on the part of the purchaser to institute developments.

QUOTATIONS OF COTTON YARNS.

By Buckingham, Paulson & Co., New York, Philadelphia and Chicago, October 13.

| | | |
|--------------------------------|--------|--------|
| No. 10s-1 and 12s-1 warps..... | 16 | 16 1/4 |
| No. 14s-1 warps..... | 17 | 17 1/4 |
| No. 16s-1 warps..... | 17 1/2 | 17 1/2 |
| No. 20s-1 warps..... | 18 | 18 1/4 |
| No. 22s-1 warps..... | 18 1/2 | 18 1/2 |
| No. 26s-1 warps..... | 19 | 19 1/4 |
| No. 6s to 10s yarn..... | 16 | 16 1/4 |
| No. 12s-1..... | 16 1/2 | 16 1/2 |
| No. 14s-1..... | 17 | 17 1/4 |
| No. 16s-1..... | 17 1/2 | 17 1/2 |
| No. 20s-1..... | 18 | 18 1/4 |
| No. 22s-1..... | 18 1/2 | 18 1/2 |
| No. 26s-1..... | 19 | 19 1/4 |
| No. 8s-2 ply soft yarn..... | 15 1/2 | 15 1/2 |
| No. 10s-2 ply soft yarn..... | 16 1/2 | 16 1/2 |
| No. 8s-2 ply hard..... | 15 1/2 | 15 1/2 |
| No. 10s-2 ply hard..... | 16 1/2 | 16 1/2 |
| No. 12s-2 ply hard..... | 17 | 17 1/4 |
| No. 14s-2 ply..... | 17 1/2 | 17 1/2 |
| No. 16s-2 ply..... | 18 | 18 1/4 |
| No. 24s-2 ply..... | 19 1/2 | 19 1/2 |
| No. 26s-2 ply..... | 20 | 20 1/4 |
| No. 30s-2 ply yarn..... | 21 | 21 1/4 |
| No. 40s-2 ply..... | 26 | 26 1/2 |
| No. 8s-3, 4 and 5 ply..... | 15 1/2 | 15 1/2 |
| No. 20s-2 ply chain warps..... | 18 | 18 1/4 |
| No. 24s-2 ply chain warps..... | 20 | 20 1/4 |
| No. 26s-2 ply chain warps..... | 20 1/2 | 20 1/2 |
| No. 16s-3 ply hard twist..... | 21 | 21 1/4 |
| No. 20s-3 ply hard twist..... | 23 | 23 1/4 |
| No. 26s-3 ply hard twist..... | 26 | 26 1/2 |

Prices nominal; market dull.

Break in Southern Iron Association.

The Sloss-Sheffield Steel & Iron Co. and the Alabama Consolidated Coal & Iron Co. have withdrawn from the Southern Iron Association, which will probably mean the practical dissolution of that organization. A representative of the Sloss-Sheffield Company is quoted as saying:

"We learned that the Alabama Consolidated Coal & Iron Co. had withdrawn from the association, and we decided to do the same, as we had proof that certain concerns were cutting prices. We gave fair warning of the possible action we would take at the meeting held early this month. We have always kept faith with the association, never having sold a pound of iron below the schedule. The withdrawal of our company and the Alabama Consolidated practically means the disruption of the association. I cannot say what effect the dissolution will have on iron prices. I believe, however, that consumers will be more inclined to come into the market."

Blast-Furnace Statistics.

In its weekly review the Iron Age says: "Our monthly blast-furnace statistics, which represent conditions as prevailing on October 1, deal with affairs as existing before the measures to restrict pig-iron production were put into effect. They must therefore not be taken as indicating the present state of the pig-iron industry. The figures show that the production of coke and anthracite pig-iron in September was 1,556,717 gross tons, as compared with 1,571,126 tons in August. The production was therefore at practically about the same rate during both months. During September the number of coke and anthracite furnaces blown out was twenty-seven, as compared with seven blown in, showing a net reduction of twenty. This was sufficient to reduce the weekly capacity of active coke and anthracite furnaces from 300,197 tons on September 1 to 354,474 tons on October 1. A still greater reduction is shown in comparison with the figures for June 1, when the capacity of the active furnaces was 388,178 tons. Since the beginning of the current month nine blast furnaces are stated to have been blown out in the Mahoning and Shenango valleys, as well as quite a number of stacks in other parts of the country, and still more furnaces are being prepared for blowing out. The movement to restrict production is therefore fairly under way."

Ernest Bunge, 124 Boulevard der Strasbourg, Havre, France, writes to the Manufacturers' Record that he desires to get into communication with American exporters of dried fruits and lubricating oils with a view to becoming their agent.

The monthly shipment of gold bullion from the Halle gold mine in South Carolina received last week at Charlotte, N. C., was in one brick valued at about \$10,000.

A board of trade is being organized at Laurel, Miss., and will work systematically to attract investors and farmers to that neighborhood.

MECHANICAL.

Carborundum Products.

The development and manufacture of carborundum at Niagara Falls has been one of the most interesting and important industrial advances of recent years. Immediately following the solution of the problem of commercial manufacture of carborundum the question presented itself of cementing or binding the granular material into forms and shapes convenient for grinding purposes, especially in forming wheels to be used as a substitute for emery and corundum. A careful investi-

the finished articles in a plant that is as complete as science and art, supported by unlimited capital, can make it. An accompanying illustration presents a view of carborundum products.

The Carborundum Co. has branches in all the leading cities and towns of the United States, and is represented in the leading industrial and commercial centers of foreign lands.

A Large Refrigerating Machine.

Owners of refrigerating plants or those who may contemplate operating equipment of that character will doubtless be interested in the accompanying illustra-

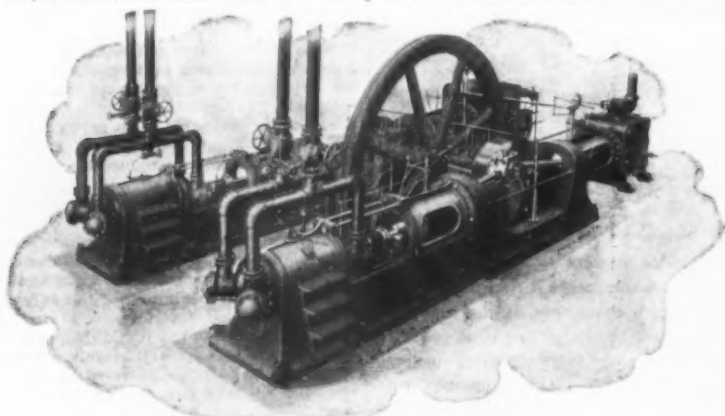


CARBORUNDUM PRODUCTS.

gation of methods in manufacturing emery resulted in adopting the vitrified process and the introduction of improvements, the greatest being the application of hydraulic pressure in forming the wheel prior to vitrification. This produces a wheel of the highest possible solidity and strength. While carborundum is first of all adapted for an abrasive because of its extreme hardness, yet it has refractory and chemical properties which have greatly extended its use in the arts, especially the manufacture of steel. In industrial circles it is well known that the Carborundum Co. of Niagara Falls, N. Y., (manufacturing under the Acheson patents) introduced and manufactures carbo-

tion of a large refrigerating machine recently installed.

The machine comprises a cross-compound Corliss engine, the high-pressure cylinder being 28-inch bore and 40-inch stroke, and the low-pressure cylinder 48-inch bore and 40-inch stroke. The frames are of the heavy-duty type and cranks of the disc pattern; each side of the engine connected to an ammonia compressor, both of which are double-acting and of 20-inch bore and 40-inch stroke. The daily capacity in refrigeration is equal to the melting of 320 tons of ice in twenty-four hours. It will be noticed that the machine is very compact throughout. It was erected for the Theo. Hamm Brew-



A LARGE REFRIGERATING MACHINE.

rum goods of various kinds, in perfecting which it has invented and made use of many new and valuable methods of manufacture. The company's carborundum products include materials for the requirements of the grinder and polisher of metal, rubber, marble, ruby, granite, sapphire, terra-cotta, glass, porcelain, pearl, wood, leather, rawhide, paper, etc. Its manufactures embrace crude carborundum crystals, grains and powders, carborundum wheels, carborundum sticks, knife-sharpeners, hones and bricks, carborundum paper and cloth, carborundum dental goods. All the processes are carried through from the raw materials to

ing Co., St. Paul, Minn., less than a year ago. Similar machines are in operation with the G. H. Hammond Company, packers, Chicago, Ill., and the Pittsburg Brewing Co., Pittsburg, Pa. The Vilter Manufacturing Co. of Milwaukee, Wis., built the machine briefly described. It also builds standard double-acting ammonia compressors driven by high-pressure, compound and compound condensing Corliss engine, as also single-acting ammonia compressors driven by slide-valve engines on the same bed-frame.

Either of these styles are furnished also for driving by electric motor, gas or gasoline engine or from lineshaft. These ma-

chines are built in capacities of from one and one-half tons refrigeration or three-quarters ton ice-making capacity up.

The Vilter plant for building ice-making and refrigerating machines covers about five acres of ground at Milwaukee.

Jeffrey Barrel-Handling Machinery.

Labor-saving devices for handling raw materials and finished products are designed and built for any and every industry. Manufacturers who have to handle filled barrels will be interested in the ac-

veyor with too much of a jar. The platform conveyor consists of two strands of roller chain, covered completely with hardwood slats, forming an endless belt or apron. The two conveyors described being of the roller type will travel on a track with a minimum friction, wear and consumption of power. From the platform conveyor the barrels are rolled onto the trays of the combined elevator and conveyor, which carries them down to any one of the several floors on the descending side. The special features of this com-



FIG. 1-JEFFREY BARREL-HANDLING MACHINERY.

companying illustrations of a system of elevating and conveying equipment for handling filled sugar barrels in the plant of the Canadian Sugar Refinery Co. at Montreal.

The system consists of one incline elevator and conveyor, one combined elevator and conveyor and one horizontal platform conveyor, which three are shown in part by Figure No. 1. The barrels are elevated up from the outside by means of a specially-constructed elevator consisting of two strands of roller chain with saddles or arms at intervals. The first por-

tion of the combined elevator and conveyor are the swinging finger trays or saddles and the loading and unloading devices. The barrels are rolled from the platform conveyor onto loading fingers; the swinging trays, coming up between the loading fingers, lift off the barrels, carry them upward across the room and down on the other side, depositing them on discharging fingers located at different floors, from where they roll off on the floor. The loading and unloading is done automatically. The loading fingers are made to fold back out of the way in case it is desired to pass them without



FIG. 2-JEFFREY BARREL-HANDLING MACHINERY.

tion of this elevator is on an incline of about 60 degrees, and the second portion practically level. The barrels are picked up automatically from skids and discharged over the head wheels onto the horizontal platform conveyor shown in Figure No. 1. As the barrels are discharged over the head wheels of the incline conveyor they are guided onto the platform conveyor by means of a swinging guide or check suspended from the ceiling, which also prevents the barrels from traveling at more than a certain speed and from striking the platform con-

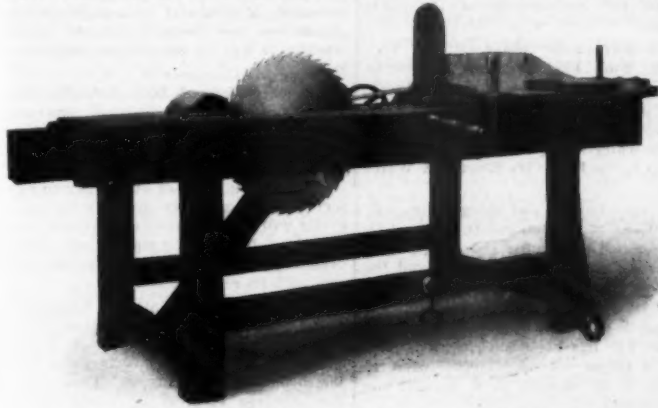
discharging the load. This elevator is made reversible so that it will elevate or lower on either side, and will do more work in a limited space, it is claimed, than any other device on the market. It can also be used for handling sacks, boxes and miscellaneous freight. This machinery is capable of handling from 500 to 600 barrels per hour easily within a minimum of power, and being practically automatic in all of its operations, requires no hand labor to speak of.

The equipment described was built by the Jeffrey Manufacturing Co., which

makes a specialty of designing and installing this character of work. Main plant and office at Columbus, Ohio.

Gibbes Portable Shingle Machine.

Manufacturers of shingles are asked to direct their attention to the accompanying illustration of an improved self-feed shingle machine. The machine is shown with a 20-inch shingle saw and the shingle carriage. The mandrel and bearings are extra heavy, the feed belt is leather, and all materials used are the best obtainable for the purpose. The carriages



GIBBES SELF-FEED PORTABLE SHINGLE MACHINE.

are extra strong and heavy, being made of selected hardwood. Track iron is planed and accurately fitted.

Size of driving pulley 8x8½ inches, and should make about 1600 revolutions per minute. Machine requires four to six horse-power. Capacity, 1000 to 1200 shingles per hour.

On the pulley side of machine is a bolting attachment, consisting of 36-inch bolting saw and bolting carriage, as usually used for ripping stock into suitable dimensions for sawing into shingles, for, though a saw-mill may be used for bolt-

A Record in Coal Hoisting.

The steadily-increasing bulk in which coal is conveyed by sea and rail and stored for boiler service in high pockets at power stations and plants has led to a demand for increased speed in the necessary hoisting and handling machinery.

Demurrage on steamships and cars is an item to be carefully avoided in economical management, and the large coal cargoes now shipped to terminals can only be handled with success by specially-designed high-speed machinery. The problem is different from and more difficult

Run-of-mine bituminous coal was raised ninety feet above the tidewater from one hatch of a vessel and delivered to the storage pockets, cracked to mechanical stoking size, at the rate of 320 tons per hour by one tower. This is an advance of about 200 per cent. upon the previous best, and marks an important mechanical engineering achievement.

To attain this end the steam engines of 50 to 100 combined horse-power in common use have been replaced by machinery of 300 horse-power, and the coal-cracking machine attached to the tower cranks to the proper dimensions for automatic stokers before passing to the pockets the enormous quantity of coal, over five tons per minute, delivered to it from the hoisting machinery. The ordinary small steam shovel has been supplanted by an automatic one of two tons capacity at each lift.

The time occupied in raising two tons of coal from the hold of a vessel to the discharging hopper nearly 100 feet above is only six seconds, while the round trip, involving the operations of lowering and moving the shovel out on the boom, opening the former, digging up two tons of coal, raising it to the level of the hopper and discharging it therein, is frequently performed in twenty-two seconds.

The installation shown in the illustration follows in general design, but in heavier proportion, the standard Hunt steeple-tower rig, the moving gear and coal cracker being electrically driven and the hoisting engine direct connected. The towers have to traverse overhead the whole length of the coal-storage pocket and to move thirty feet at a time without changing steam connection. In this way a single tower can operate on each hatch of a vessel in turn, or several towers can work simultaneously.

The boom, made to fold up for the free manipulation of vessels with their rigging, has an overhang of forty feet, and enables the tower to operate on coal

substantial revolving frame, both driven by the same belt, and are so arranged that when one works the other remains at rest. Each saw can be adjusted to cut to its limit, or so that grooves of any depth can be made.

Expansion grooving heads can be furnished, cutting grooves to two inches wide, while the 14-inch saws used will cut off or rip quickly and accurately material up to four inches thick.

The table can be angled to 45 degrees,



IMPROVED DOUBLE CIRCULAR SAW.

and is in two sections, one being stationary for ripping and the other for cross-cutting, this last being nineteen inches wide, and moves out on rollers to admit grooving heads of different sizes to be inserted in the opening. The angle of the table is made by a curved slotted bar, with scale showing degree of incline, and quadrants on table regulate the right and left angles. All the different adjustments are made rapidly and easily, saving time, attention and labor.

J. A. Fay & Egan Co., 270 West Front street, Cincinnati, Ohio, builds this machine.

Cannery for Huntsville.

Mr. Ben P. Hunt, secretary of the Chamber of Commerce of Huntsville, Ala., writes to the Manufacturers' Record that



FIG. 1—THE RECORD-BREAKING COAL UNLOADER AT THE LINCOLN WHARF POWER STATION, BOSTON, MASS.



FIG. 2—THE C. W. HUNT CO.'S COAL UNLOADER AT BOSTON.

ing, the arrangement mentioned is more convenient and makes practically a complete shingle outfit combined in one machine. All else required is a cross-cut saw or a drag-saw machine to saw logs into proper lengths, and with the bolting saw the stock is ripped and then cut into shingles with the smaller saw and carriage.

For further particulars address Messrs. W. H. Gibbes & Co., Columbia, S. C., manufacturers and dealers in saw and shingle mill machinery and mill machinery generally.

to the machinery incidental to the service, and it changes constantly with the nature and size of the coal, which may vary from a soft pea variety contained in open wooden barges to a hard foreign product in cubes two feet square loaded in steel vessels with small hatches. A great advance in the speed of handling coal from freight vessels and barges calls to be recorded, a world's record for rapid unloading having been recently established by the C. W. Hunt Co., West New Brighton, N. Y., at the Lincoln Wharf Power Station of the Boston Elevated Railway Co.

steamers of the widest beam and largest dimensions.

Improved Double Circular Saw.

Herewith is illustrated a machine for doing work in furniture, pattern, sash and carriage factories, and it can be used for such work as ripping and cross-cutting in a manner almost unlimited. The machine embodies features and improvements that insure perfect execution of the work for which it has been especially designed. Two saws, one to rip and the other to cross-cut, are used, being mounted in a

there is a good prospect for the establishment of a cannery factory at Huntsville, and that a practical man of some means experienced in canning fruits and vegetables will get substantial aid in the way of subscriptions to stock to the amount of several hundred dollars. He adds that the country around Huntsville is splendid for fruits and vegetables, and that correspondence is solicited.

The Creole Line has started a steamship service between Savannah and ports of France, Spain and Italy.

CONSTRUCTION DEPARTMENT.

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY.

The Manufacturers' Record seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

ALABAMA.

Anniston-Spike Mill and Coopersage Plant. Weller Rolling Mill Co. will add \$15,000 spike mill and coopersage plant to its mill; W. T. Owen, secretary.

Anniston-Drug Company.-Live & Love Drug Co. has been incorporated to succeed the Love Drug Co. Capital is \$5000 and officers are O. A. Love, president-general manager; W. H. Doster, secretary, and J. F. Yates, treasurer.

Baldwin County.-Land Improvement.-Southern Plantation Development Co., general offices Suite 1024, 79 Dearborn street, Chicago, Ill., has purchased a tract of 80,000 acres of land in Baldwin county, besides the good-will of a company which has already colonized 12,000 acres adjoining. Company will commence its plant for manufacture of wood turpentine and other by-products within the next three months at a cost of \$100,000, handling from 75 to 100 cords of wood per day; company will also put in canning factories, starch factories, sugar-cane and syrup mills, etc.

Birmingham-Paint Company.-Salva Paint Co. has been incorporated, with capital of \$10,000, by Grey J. Huffman, Joseph F. Johnston and C. S. Huffman, for the manufacture of paint.

Birmingham-Mercantile.-Chartered: A. E. Campbell Co., with capital of \$3000, by A. E. Campbell and A. J. Camp.

Birmingham-Manganese Mines.-John L. Ray of Albertville, Ala., has option on manganese properties near Grayton Station, and contemplates organization of stock company for developing the property.*

Birmingham-Land Improvement.-Rugby Land & Improvement Co. has acquired controlling interest in the East Lake Land Co., and the two concerns will be managed together. Improvements already under way on the East Lake property will be pushed to completion and further work undertaken. Bradley J. Saunders, vice-president and general manager of the Rugby Company, has

been elected vice-president and general manager of the East Lake Land Co.

Fruitdale-Cannery.-It is reported that J. R. Abrams of Brunswick, Ga., is interested in the establishment of a cannery at Fruitdale with capacity of 10,000 cans per day.

Gadsden-Flour Mill.-Cassels Bros., manufacturers of flour, will erect new mill; building will be four stories, of brick, 50x100 feet.

Hartselle-Water-works.-System of water-works may be constructed. Address: The Mayor.

Hartselle-Electric-light Plant.-Shipp & Tapscott Manufacturing Co. will install electric plant for lighting stove mill and for supplying lights to the city.

Huntsville-Sewerage.-City has awarded contract to Hutchens & Murdock at \$7390 for extension of sewerage system.

Jasper-Coal Mines.-The Lancaster Coal & Coke Co. of Pennsylvania has purchased the Palos coal mines near Jasper, in Walker county, from D. M. Wrennen and others of Birmingham; property consists of 2000 acres, on which there is a coal mine producing 400 tons a day.

Mobile-Dredging.-Home Dredging Co. has been incorporated, with capital of \$25,000, by Lee E. Kimball, Chas. G. Ollinger and Harry W. Ollinger.

Mobile-Auction, etc., Company.-Mobile Auction & Commission Co. has been incorporated, with capital of \$5000, by A. A. Richards, M. C. Forchheimer and T. G. Bush.

Selma-Portland Cement Works.-Charles Aaron Sawyer of Boston, Mass.; B. F. A. Taylor and others are interested in the organization of a \$3,000,000 company to be chartered under Georgia laws and with headquarters at Atlanta, Ga., for development of cement rock in Dallas county and for the establishment of a plant to manufacture Portland cement with capacity of 5000 barrels a day.

Thorsby-Planing Mill and Woodworking Factory.-Thorsby Lumber & Manufacturing Co. (established) will be incorporated with capital stock of \$500,000.

Walker County-Coal Mines.-It is reported that the Pittsburgh Coal Co. of Pittsburgh, Pa., has acquired the Monongahela Coal Co., which last year acquired the Corona Coal & Coke Co., the leading coal property in Walker county.

ARKANSAS.

Bentonville-Bridge.-Benton county will construct \$12,000 steel bridge across White river. Judge E. L. Taylor, Bentonville, has letting of contract for building same.

Godman-Coal Mines and Coke Ovens.-Black Diamond Coal & Coke Co. has been incorporated, with capital of \$25,000, and G. H. White, president; H. J. Fowler, vice-president, and W. A. Butterfield, secretary-treasurer.

Helena-Publishing.-World Publishing Co. has been incorporated, with capital of \$12,500, by Oscar D. Driggs, Jesse H. Geduldig, Chas. N. Underwood and William M. Neal.

Little Rock-Stone and Construction Company.-Big Rock Stone & Construction Co. has been incorporated, with capital stock of \$100,000, and W. W. Dickinson, president; J. J. Ball, vice-president, and C. E. Taylor, secretary-treasurer.

Little Rock-Sewer Construction.-Contract has been awarded Nick Peay for construction of 4000 feet of sewer.

Rison-Mercantile.-Chartered: E. W. Emerson Co., with capital of \$10,000, and T. H. Ackerman, president.

FLORIDA.

Bowling Green-Turpentine Plant.-J. L. Conoley and M. M. Smith have purchased and will operate turpentine plant at Bowling Green of Alford Bros.

De Land-Telephone System.-E. L. Potter has been granted franchise for construction of telephone system.

Duval-Timber and Turpentine Lands.-W. J. Hillman & Co. of Jacksonville, Fla., have purchased the business of D. C. Stricklin & Co. at Duval and 140,000 acres of timber lands, together with four turpentine locations, from the Naval Stores Manufacturing Co. of Jacksonville.

Eagle Lake-Turpentine Properties.-Callahan, Fort & Boyd have purchased turpentine interests at Eagle Lake of Feagin & Norman.

Electra-Turpentine Plant.-J. H. Martin has purchased turpentine business of Middleton & Co. at Clarksville, and will operate in connection with his naval-stores business at Electra.

Fort White-Phosphate Mines.-Samuel W. Ferguson, Charleston, S. C.; Augustin L. Taveau, Baltimore, Md., and Arthur J. Henry, Lake City, Fla., have incorporated the Fort White Hard Rock Co., with capital of \$15,000, for development of phosphate mines, etc.

Juliette-Turpentine Plant.-R. L. Ivey of Ocala, Fla., has purchased turpentine plant and property of S. M. Davis at Juliette.

Lake City-Electric-light Plant and Water-works.-City council has granted electric-light and water-works franchises and other privileges to the Lake City Electric & Water Co.

Lumberton-Lumber and Shingle Mills, etc. Neli G. Wade, W. E. Bell and D. B. Morrison have purchased the lumber and shingle mills of James R. Ingram at Lumberton and the turpentine lands of J. T. Wade & Co. at Millard.

Manatee-Fertilizer Factory.-Manatee Fertilizer Co. has been incorporated, with capital of \$25,000, for manufacture of fertilizers, by T. W. Shands, F. R. Knight and W. B. Coarsey.

Miami-Ice Factory.-East Coast Ice Co. will make improvements, including addition of cold-storage room with capacity of 500 tons.

Miami-Stone Quarry.-Offer-Cronkite Quarry Co. is installing additional machinery for increasing capacity of its stone quarry.

Ocala-Ice Factory and Woodworking Plant, Florida Meat Packing Co. will consolidate with the Florida Ice Manufacturing Co. and operate as the Florida Packing & Ice Co., with Simon Benjamin of Jacksonville, Fla., president. New machinery for enlarging ice plant will be installed and company has also completed arrangements for the establishment of saw-mill and crate factory in connection with ice plant.

Orlando-Repair Shop.-J. N. Cook and J. T. Barnett are erecting building and will install machinery for general repair shop.

Pensacola-Timber and Lumber Company. John McDavid, A. D. Morrison and Henry Hyer have incorporated the McDavid Timber & Lumber Co., with capital of \$2000, for conducting general timber and lumber business.

Pensacola-Timber-land Development.-The Indiana Land & Harbor Co. has been incorporated under New Jersey laws, with capital stock of \$5,000,000, by Indiana parties for development of timber and farm lands in Florida.

GEORGIA.

Atlanta-Motor-coach Factory.-American Motor Coach Co., Arthur G. Bennett, president, will operate a line of motor coaches in Atlanta and establish factory and repair shop in that city.

Buena Vista-Electric-light Plant.-City contemplates installing electric-light plant. Address Geo. R. Lowe, recorder.

Bufoed-Water-power-Electrical Plant.-Winding Shoals Electric Power Co., reported incorporated, etc., last week with \$500,000 capital, will at first install equipment for generating and transmitting about 3000 horsepower, to be increased later to 6000 horsepower. A substation will be built at Atlanta to reduce the electric current for transmission into that city. The water-power dam will be of the crib type, requiring more than 1,000,000 feet dry rubble and sawed lumber. About 6,000,000 feet of lumber will be used in all the work. The Electrical Equipment Co., J. W. Peterson, president, 239 Monadnock Building, Chicago, is preparing plans and specifications for dam, power-house and all the machinery needed, and will soon be ready to receive bids. Mr. Peterson made the surveys, and will be engineer in charge of construction. As previously stated, D. B. Stanciliff of Atlanta, Ga., is the Winding Shoals corporation's secretary.

Dalhousie-Gold Mines.-McAfee-Lind Gold Mining Co. has been organized for developing the Rutherford property recently purchased. W. W. McAfee of Atlanta, Ga., is president; Henry Schandline, Philadelphia, Pa., vice-president; M. P. Lind, Philadelphia, secretary-treasurer, and W. H. McAfee of Atlanta, general manager.

Dupont-Saw-mills, etc.-W. W. Gill &

Sons have purchased timber lands near Dupont, and will develop by erection of saw-mill and naval-stores plant.

Naylor-Cotton Gin.-J. L. Roberson will rebuild cotton gin lately reported burned. Building will be 30x75 feet.*

Quitman-Cotton Mill.-Atlantic and Gulf Mills, reported last week to double plant, will erect buildings to accommodate the new machinery. Over 5000 spindles will be installed. Preliminary plans have been prepared, but the company has not decided whether it will let contract or build by day labor.

Rockmart-Cement Mill.-Southern States Portland Cement Co., John W. Boardman, treasurer, 1107 Empire Building, Atlanta, Ga., will soon have its cement mill at Rockmart (previously reported) completed and in operation; total cost of buildings and equipment will be approximately \$350,000, and capacity will be 1600 barrels of Portland cement per day; later on company will operate crushing plant and slate quarry in connection with its cement business.

Savannah-Tanks.-National Tank & Export Co. is negotiating for erection of tank; contract not yet awarded; present capacity 15,000 barrels; amount to be invested in new improvement about \$100,000. Company also contemplates erection of tanks at other naval-stores points.

Tifton-Iron Works, etc.-George T. Gifford, G. W. Gifford and John A. Ritchie have incorporated the George T. Gifford Iron Works Co., with capital of \$8000, for conducting general iron works, foundry and machine shop business.

Tifton-Mercantile.-Chartered: Gress Manufacturing Co., with capital of \$25,000, by M. V. Gress and others for conducting general mercantile business.

KENTUCKY.

Franklin-Road Improvement.-Simpson county has appropriated \$10,000 for road improvements. Address county clerk.

Gondola (not a postoffice)-Oil and Gas Wells.-Chip Oil & Gas Co. has been incorporated, with capital of \$30,000, by D. Y. Hagy and others.

Gordon-Bakery.-Chartered: Gordon Bakery, with capital of \$500, by C. T. Dizmore and others.

Hazard-Water-works.-Hazard Water-Works Co. has been incorporated, with capital of \$5000.

Middlesborough-Coal Mines.-Yellow Creek Coal & Lumber Co. has purchased and will develop 30,000 acres of coal lands in several Kentucky counties.

Paducah-Publishing.-Ledger Publishing Co. has been incorporated, with capital of \$5000, by Sterling W. Banks, R. D. Wilbank and W. A. Hall.

Pine Top-Milling.-Chartered: Pine Top Milling Co., with capital of \$11,000.

Venters (not a postoffice)-Telephone Company.-Venters Telephone Co. has been organized, with capital of \$7000, to connect Elkhorn City, Praise and other towns. G. F. Holbrook is chief incorporator.

Whitesburg-Mineral-land Development.-The Mineral Development Co., Philadelphia, Pa., is having mineral property in Letcher county surveyed. L. W. Fields of Whitesburg, Ky., has contract to superintend the work.

Whitesburg-Saw-mill.-Crawford & Collins of Rockhouse, Ky., will erect saw and planing mill near Whitesburg for development of timber lands.

Winchester-Bakery.-C. P. & B. A. Mann have purchased and will operate the Brown Bakery.

LOUISIANA.

Abbeville-Machine Shops, etc.-J. F. Ritter of Jennings will, as lately reported, establish machine and general repair shop, with rice irrigation well business in connection, at Abbeville; also expects to handle engines, boilers, pumps, mill supplies, etc.

Bail-Lumber Mill.-J. F. Bail & Bro. have purchased 1500 acres of timber land, and will enlarge their mill for developing the property.

Franklin-Candy Factory.-A. S. Achee will establish candy factory.

Franklin-Lumber Mills.-Company has been organized for taking over and operating the mills of the Albert Hanson Lumber Co.; plant has capacity of 75,000 feet of lumber

per day, and includes planing mills, sash, door and blind factory.

Helena—Terminals.—A tract of seventy-five acres of land has been purchased at Helena to be used for terminal purposes by the Memphis, Helena & Louisiana, the Texas & Pacific and the New Orleans & Northwestern railroads. Roundhouses, terminals, shops, freight terminals and other improvements will be made. Address W. J. Tyler, general superintendent of the New Orleans & Northwestern, St. Louis, Mo.

Lake Charles—Street Paving.—Baer & Pringle of Kansas City, Mo., have contract at \$57,228 for paving Ryan street with vitrified brick in Lake Charles.

Morgan City—Lumber Mills.—Morgan City Cypress Lumber Co. has been organized by John F. Herbert, S. C. Teves, William Drews, Jr., and others.

New Orleans—Sewerage.—Contract will probably be awarded Cusachs & Co., at \$26,000 for construction of sewers.

New Orleans—Can Factory.—Southern Can Co., Limited, previously reported as incorporated to establish can factory of 60,000 cans per day capacity, has completed its organization with capital of \$50,000, electing Fred. D. Becker, secretary. Work on erection of plant will be commenced at once. Address 305 Hennen Building.*

Welsh—Machine Shops.—Welsh Machine & Well Works Co., whose plant was recently burned at loss of \$15,000, will rebuild at once.

Whitewater—Saw-mill.—H. L. Baker, president of the Baker-Wakefield Cypress Co., is making arrangements for establishment of his proposed saw-mill on Bayou Lafourche.

MARYLAND.

Baltimore—Chemical Works.—Chesapeake Chemical Co. has been incorporated, with authorized capital of \$12,500, by James Lester Shipley, Jr., George Shipley and G. Lane Taueyhill, Jr., to manufacture trade wastes into various commodities.

Baltimore—Laundry.—Baltimore Sanitary Laundry Co. has been incorporated under New Jersey laws, with capital of \$30,000, by Wm. A. Mulcahy and Henry Y. Bready, for conducting general laundry business in Hamden. For further particulars address Wm. A. Mulcahy, 237 Carroll street, Woodberry, Baltimore, Md.*

Baltimore—Real Estate.—Star Real Estate Co. has been incorporated, with capital of \$2600, by Felix Slusky, Morris Koppleman and others.

Baltimore—Wagon Factory.—John N. Kunkel & Son will erect three-story brick addition 60x60 feet to wagon factory. John Koch has contract at \$3500.

Cockeysville—Bridge.—Bridge will be constructed on public road over Northern Central Railway at Jessups Crossing, near Cockeysville, by the county and railroad company jointly.

Frostburg—Power-house.—John W. George of Cumberland, Md., has contract to build power-house for Frostburg Illuminating & Manufacturing Co.; building will cost \$6500.

Roland Park—Road Improvement.—County commissioners have appropriated \$3000 for improving Roland avenue.

MISSISSIPPI.

Aberdeen—Button Factory.—Aberdeen Button Manufacturing Co. has been incorporated, with capital of \$10,000, by John R. Young, W. W. McDougal, W. W. Watkins, W. S. Greene and others, for manufacture of bone, pearl, ivory and metal buttons.

Collins—Saw and Planing Mills.—W. C. Wood Lumber Co., reported recently as to have its proposed saw and planing mills in operation about March 1 with capacity of 50,000 feet per day, has been incorporated, with capital of \$100,000, by W. C. Wood, W. B. Allen, E. N. Wood, E. E. Robertson and W. McAlexander.

Corinth—Clothing Factory.—Weaver Manufacturing Co., reported incorporated last week with \$50,000 capital, will manufacture trousers and skirts, not cloth. A suitable building is now being erected.

Greenville—Street Paving.—City has awarded contract to Southern Paving Co. at \$90,000 for paving streets.

Meridian—Hardware Company.—Frank Smith Hardware Co. has been incorporated, with capital of \$25,000, by F. E. Smith, J. C. Pritchett and others.

Mississippi—Saw-mill.—F. J. Blackwell Lumber Co. will remove one saw-mill from Jones, Tenn., to a point in Mississippi for development of timber tract which has been purchased.

Vicksburg—Crematory.—City has accepted plans and specifications of Stanton & Son,

architects, for proposed garbage crematory.

Williamsburg—Electric-light Plant and Water-works.—City will issue \$10,000 of bonds for erection of electric-light plant and construction of water-works. The issue of these bonds was reported recently as contemplated for purchase of the local plant; J. F. Williamson, mayor.

MISSOURI.

Carrollton—Wagon Works.—Beggs Wagon Co. is having plans made for erection of wagon works with capacity of 65,000 wagons per year.

Edina—Wagon Works.—Miller Wagon Co. will erect new plant, consisting of main building 80x250 feet and several storage warehouses; capacity will be from 1000 to 1500 farm wagons and 500 buggies per year.

Jefferson City—Bridge.—City council has instructed street commissioner to build abutments for an iron bridge on Walnut street; abutments to cost \$1200, and soon as they are finished city will receive bids on the superstructure. Address J. C. Herring, city engineer.*

Kansas City—Cracker, etc., Factory.—Loose-Wiles Cracker & Candy Co. will erect six-story brick addition to its factory at cost of \$32,000.

Poplar Bluff—Handle Factory.—Walsh & Hollingshead of Vincennes, Ind., are investigating with view to establishing ash-handle factory at Poplar Bluff.

Sedalia—Zinc Mine.—Company has been organized, with capital stock of \$500,000, for developing the Dan Grow zinc mine; improvements will be made. Dan Grow is president of the new company; Roy J. Howe, vice-president; Walter Grow, treasurer, and D. J. Delong of Chicago, Ill., secretary.

St. Louis—Investment Company.—Chartered: Blair Investment Co., with capital of \$10,000, by Richard B. Waite, William Albright, G. E. Stodtman and others.

St. Louis—Flour Mills.—Chartered: Kehlor Flour Mills Co., with capital stock of \$500,000, by George F. Tower, Jr., W. C. Ellis and others.

St. Louis—Housefurnishing.—Chartered: Eastern Housefurnishing Co., with capital of \$25,000, by Chas. A. Wilcox, Chas. A. Smith and others.

St. Louis—Furniture Factory.—Brookes Manufacturing Co. has been incorporated for manufacture of furniture by W. S. Brookes, William S. Hervey, F. V. Hervey and others; capital \$2500.

St. Louis—Mercantile.—Chartered: Becker Grocery Co., with capital of \$10,000, by Edwin F. Wippen, Geo. O. Althage and others.

St. Louis—Lumber Company.—H. Wachsmuth Lumber Co. has been incorporated, with capital of \$6000, for conducting lumber business, by H. Wachsmuth, M. Morris, E. Wachsmuth and others.

St. Louis—Building Material.—Lawrence Stone & Construction Co. has been incorporated, as recently reported, for manufacture of hollow concrete building stone with capacity of from twelve to fifteen cars per week; also to conduct general construction business. Building will be 50x100 feet, and capital to be invested \$10,000. Address 3431 Cherokee street.*

St. Louis—Shirt and Underwear Factory.—Buckley Shirt & Underwear Co. has been incorporated, with capital of \$25,000, by Michael J. Morlock, J. Henry Biermann, Fremont T. Fischer, Henry G. Schuarr and others.

St. Louis—Chemical Company.—E. R. Berry Chemical Co. has been incorporated, with capital of \$100,000, by Ella R. Berry, Alfred K. Prince, Messie M. Rich and others for dealing in and manufacturing chemicals, drugs, etc.

St. Louis—Shoe Company.—Flegle Shoe Co. has been incorporated, with capital of \$60,000, by Walter Jones, James Clark, Robert Dunn and others.

St. Louis—Tool Company.—Davis Expansion Boring Tool Co. has been incorporated, with capital of \$30,000, by Emery M. Davis, Alexander Landan and others for the manufacture of tools, machinery and other devices.

NORTH CAROLINA.

Carthage—Investment Company.—Chartered: Carthage Investment Co., with capital of \$10,000, by W. C. Petty and others.

Charlotte—Drug Company.—Gray-Reese Drug Co. has reorganized with Robert Gray, president.

Concord—Lumber and Mining Company.—Cabarrus Land, Lumber & Mining Co. has been incorporated, with capital of \$15,000, by J. L. Peck, W. A. Smith and others.

Greenville—Livery.—Vanstory Livery Co. has been incorporated, with capital of \$15,000,

by George C. G. Graves of Carthage, N. C., and others.

Greenville—Tobacco Company.—Farmers' Consolidated Tobacco Co. has been incorporated, with capital of \$125,000, by O. L. Joyner and others for manufacture of cigars, tobacco and cigarettes.

Greenville—Lumber and Veneer Mills.—Greenville Lumber & Veneer Co. has been incorporated, with authorized capital of \$25,000, for manufacture of lumber and veneering, by A. B. Minor of Suffolk, Va.; H. McClellan, Greenville, N. C.; O. G. Calhoun, Sheldahl, N. C., and others.

Hazel—Cotton Mill.—Hazelhurst Cotton Mill Co., reported incorporated last week, is the incorporation of the established Hazelhurst Cotton Mills, operating about 1000 spindles. This capacity is now being doubled.

Henderson—Telephone and Telegraph Company.—Home Telegraph & Telephone Co. has been incorporated, with capital stock of \$500,000, by W. T. Gentry, D. I. Carson, J. W. Crowe, J. P. Taylor and others.

Hickory—Street Improvement and Water-works.—City has voted issue of \$60,000 of bonds for water-works and \$10,000 of bonds for street improvements, previously reported. Address The Mayor.

High Point—Mantel and Table Factory.—High Point Mantel & Table Co. and the Grand Rapids Furniture Co. have consolidated, and will operate as the Kearns Furniture Co., with capital of \$77,000 and O. E. Kearns, secretary-treasurer.

Durham—Mercantile.—Chartered: S. C. Anderson Co., with capital of \$25,000, for dealing in books, etc., by S. C. Anderson, L. W. Grissom and Wm. B. Guthrie.

Greensboro—Mercantile.—Williams-Nall Company has been incorporated, with capital of \$50,000, by O. Williams of Greensboro, E. D. Nall of Sanford, N. C., and others.

Lilestown—Cotton Mill.—Moore Cotton Mills contemplate installing additional machinery and a dyeing plant; present equipment 2000 spindles and ninety-six looms.

Marshall—Cotton Mill and Power Plant.—Capitol Manufacturing Co., reported incorporated last week, will develop about 2000 horse-power from water flow and build a cotton mill of 15,000 spindles and 450 looms. Mill structure will be 100x200 feet in size. No contracts have been awarded. W. J. McLendon of Wadesboro, N. C., is president and general manager.

Ramapur—Cotton Mill.—Columbia Manufacturing Co. will erect additional building two stories high, 50x88 feet, and install additional machinery.

Reldsville—Telephone System.—Southern Bell Telephone & Telegraph Co. has purchased, will improve and operate entire plant of Reldsville Telephone & Telegraph Co.

Smithfield—Cotton Manufacturing, etc.—Incorporated: Holt Cotton Co., to manufacture and deal in cotton, etc.; capital stock to be \$100,000; Stephen S. Holt, Willis H. Austin and Allen K. Smith, incorporators.

Smokemont—Saw-mill.—Spruce Lumber Co., reported lately under Asheville, N. C., as incorporated with capital of \$15,000, has 6000 acres of timber land which it will develop, and has purchased mill of 25,000 feet of lumber daily capacity, which will be erected at Smokemont. Address S. Montgomery Smith, general manager.

Waxhaw—Gold Mine.—The Colossus Gold Mining & Milling Co. of Philadelphia, Pa., operating near Waxhaw, N. C., with capacity of 100 tons per day, is preparing to erect an early date a 500-ton plant for treatment of gold, and will use its present 100-ton plant to work up the present tailing deposits.

SOUTH CAROLINA.

Aiken—Sewerage and Water-works.—City has voted issue of \$30,000 of bonds for water-works and sewerage. Address The Mayor.

Bishopville—Water-works.—Construction of system of water-works is talked of. Address J. O. Rhaim, clerk.

Charleston—Land Improvement.—J. H. Davies of the American Pipe Co. of Philadelphia, Pa., has purchased 100 acres of land near Charleston and will build suburban town to be called Chicora Place. Dwellings will be erected, streets laid off and other improvements made.

Columbia—Laundry.—Star Steam Laundry, recently damaged by fire to extent of \$10,000, will be rebuilt.

Darlington—Publishing.—New Era Publishing Co. has been incorporated, with capital of \$3000, by E. C. Dennis and T. J. Drew.

Georgetown—Wood-alcohol Plant.—Seaboard Product Co. will rebuild its plant recently burned at loss of \$15,000; buildings

will be of sheet iron and brick, 100x40 and 22x40 feet; D. H. Greene, president.*

Greenville—Poultry Farm.—B. M. Henderson will establish poultry farm and install incubators and other necessary equipment.

Newry P. O.—Cotton Gin.—Courtenay Manufacturing Co. has built and will put in operation at once new three 80-saw cotton gin of the Munger system. This to replace gin washed away by flood in June last.

Sumter—Engineering Company.—Southern Engineering Co. has been organized and established, as recently reported. Capital stock is \$10,000, and business will be general engineering, making a specialty of contracting for complete oil mills, including the buildings; will also do general building, attending to both the architectural and mechanical work; Perry Moses, Jr., manager.*

TENNESSEE.

Cave—Pants, etc., Factory.—Burroughs & Taylor Co., manufacturer of jeans, hinders and pants, is erecting an additional story to its brick factory.

Chattanooga—Repair Shops.—Chattanooga Electric Railway will expend about \$30,000 in enlarging present repair shops or building new ones.

Chattanooga—Machine Shops.—E. W. Snowden, chief architect for the Queen & Crescent Route, with headquarters at Ludlow, Ky., will begin at once on plans and specifications for improvements and enlargements to be made at machine shops and other buildings of the railroad company at cost of \$100,000. Improvements include, in part, enlargement of power-house, laying of additional track, enlargement of main machine shop and all the minor buildings and installation of some new machinery, including 200-ton electric derrick. These improvements have been in contemplation for some months.

Chattanooga—Telephone System.—The Hamilton County Telephone Co., previously reported as incorporated with capital of \$10,000 and to apply for franchise for construction of telephone system, has been granted franchise by the city.

Dyersburg—Cotton Company.—John W. Knight, E. B. Hulsey, V. P. Randolph and others have incorporated the Tennessee Cotton Co., with capital stock of \$25,000.

Joppa—Sawing Factory.—Boiling Bros. will enlarge their lawn-sawing factory.*

Knoxville—Knitting Mill.—Knoxville Knitting Mills Co., reported last week, has increased capital to \$50,000 and will install 150 additional knitting machines with complementary apparatus.*

Martell—Flour Mill.—Geo. W. Bollinger of Joppa, Tenn., has purchased the Martell flour mills, as lately reported, and will install new machinery for enlarging same; capacity will be about forty barrels; will operate as the Martell Mill Co.

Memphis—Medicine Factory.—Nitroline Manufacturing Co. has been incorporated, with capital of \$10,000, by J. H. Boone, A. Carnes, E. A. Boone, J. T. Forsyth and Howell Turner, for manufacture of medicines.

Memphis—Plantation Company.—Playa Vicent Plantation Co. has been incorporated, with capital of \$100,000, by John J. Jones, Clement H. Weyand and S. D. C. Hays.

Memphis—Land Improvement.—Strong Land Co. has been incorporated, with capital of \$7000, by A. R. Strong, W. A. Hein, M. Crump, Percy Galbreath and others.

Memphis—Heating System.—Memphis Heating Co., capitalized at \$300,000, has applied through its attorney, O. D. M. Greer, to city for 50-year franchise to operate system of underground pipes for heating all parts of the city.

Memphis—Lumber Mill.—Broughton & Co. will rebuild at once hardwood lumber mill reported burned at loss of \$6000.

Mt. Pleasant—Land Improvement.—Mt. Pleasant Real Estate & Land Improvement Co. will be organized to purchase and improve real estate by erection of dwellings, etc. For particulars address Dr. J. S. Hill.

Nashville—Game Company.—Washington Card Co. has been incorporated, with capital of \$20,000, by E. H. Roy, J. L. Wade, J. H. Roberts and others for the manufacture of parlor card game.

Pleasant View—Tobacco Factory.—York & Hunter have commenced erection of tobacco factory.

Somerville—Stock-raising.—Correction.—Chas. D. Myer, F. H. Myer, H. T. Hagler, Albert A. Hagler, E. C. Boswell and M. C. Ketchum are the incorporators of the Oakdale Stock Farming Co., reported last week. Capital is \$40,000. Through an error in our issue of October 1 names of incorporators were not correctly given.

TEXAS.

Austin—Gas Plant.—It is reported that W. H. Coldrick of the Beaumont (Texas) Gas Co. has applied for franchise to construct and operate \$50,000 gas plant at Austin.

Beaumont—Pumping Company.—Ninety-Nine Pumping Co. has been incorporated, with capital of \$5000, to prospect for oil, etc., by J. M. Smith, O. M. Darbyshire, Beaumont; J. D. Crawford, Marshall, Texas, and others.

Beaumont—Rice Mill.—McFaddin, Wiess & Kyle Land Co. has leased mill of the Atlantic Rice Mills Co., and will operate same as the McFaddin-Wiess Rice Milling Co. with W. P. H. McFaddin, president and general manager; V. Wiess, vice-president, and Percy H. Wiess, secretary-treasurer. Mr. McFaddin was reported recently as having secured controlling interest in the above mills.

Beaumont—Irrigation System.—Iowa Irrigation Co., Beaumont, Texas, will construct canal twelve miles in length to convey water from Sabine river to rice fields in Texas. About \$70,000 will be invested. W. A. Ward of Beaumont, Texas, is engineer in charge.

Beaumont—Fuel Company.—Darbyshire Fuel Co. has been incorporated, with capital of \$2000, by B. F. Darbyshire of El Paso, O. M. Darbyshire, J. M. Smith of Beaumont.

Brownwood—Telephone System.—Central Texas Telephone Co., N. H. Hollingsworth, president, Ballinger, Texas, has applied for franchise to establish telephone exchange in Brownwood.

Brownwood—Electric-light Plant.—City council is considering municipal ownership of electric-light system to be operated in connection with the city water-works, and Will H. Mayes of Business League has been requested to secure approximate cost of such a plant, and invites correspondence.

Calvert—Cannery.—H. L. Stricker and associates will organize company for erection of cannery, investing about \$2000.

Cleburne—Knitting Mill.—John Jennings of Hillsboro, Texas, proposes organizing company to establish knitting mill at Cleburne.

Cleburne—Grain Company.—Chartered: Cleburne Hay & Grain Co., with capital of \$10,000, by S. M. Hill, T. H. Teeter, J. Gould Hill and others.

Columbus—Canals, Rice Lands, etc.—Scott M. Ladd, C. S. Hunn, W. E. Hunn and N. A. Baker, all of Des Moines, Iowa, have purchased property of Red Bluff Rice Co., consisting of 4000 acres of land, canals, machinery improvements, etc., for \$120,000.

Dallas—Plano Company.—Chartered: Columbia Plano Co., with capital of \$1000, by W. T. Madders, A. T. Wilson and J. M. Swanson.

Denton—Oil Company.—Denton-Henrietta Oil Co. has been incorporated, with capital of \$100,000.

Fort Worth—Garment Factory.—Hawkins Manufacturing Co. of Hillsboro, Texas, manufacturer of overalls and jumpers, will remove plant to Fort Worth, as recently reported; capacity of plant will be enlarged.

Fort Worth—Mining.—Independent Mining Co. has been incorporated by John C. Phelan, W. T. Hall and Morgan Bryan.

Fort Worth—Telephone Company.—Fort Worth Telephone Co. has increased capital from \$304,000 to \$450,000.

Hillsboro—Cotton Gln.—Haley Gln Co. has been incorporated, with capital of \$6000, by E. M. Turner, W. M. Williams and E. B. Guttie.

Houston—Lumber Company.—South Texas Lumber Co. has increased capital from \$50,000 to \$100,000.

Lagrange—Kaolin Mines, etc.—F. B. King "Syndicate" has leased and will develop kaolin properties in Fayette county, as recently reported; hydraulic brick, tiling and pottery will be manufactured and other extensive improvements made. H. C. Cooke & Co. of Houston, Texas, will be architects; ceramic engineer will be engaged and machinery purchased. Address F. B. King, Houston, Texas, for further information.

Nacogdoches—Tobacco Cultivation.—L. H. Sheffer is organizing stock company for cultivation of tobacco.

San Antonio—Mercantile.—Chartered: San Antonio Mercantile Co., with capital of \$3500, by J. R. Morris and others.

Texarkana—Telephone Company.—Long Distance Telephone Co. has been incorporated, with capital of \$200,000, by John B. King, W. L. Estes, F. M. Marriott, W. P. Harrison and others.

Vaughan—Cotton Gln.—Robertson Gln Co. has been incorporated, with capital of \$5000, by W. C. Robertson, E. M. Turner and W. M. Williams.

Wichita Falls—Mercantile.—Chartered:

Rosenstein Bros. & Co., with capital of \$20,000, by Harry Rosenstein and others.

VIRGINIA.

Alexandria—Drug Company.—Ferris-Tone Corporation has been chartered, with capital of \$2500, for manufacture of medicines, drugs, etc., and Samuel H. Lunt, president; J. D. H. Lunt, secretary-treasurer.

Blackstone—Handle Company.—Chartered: Blackstone Hand-Shaved Handle Co., with capital of \$50,000, and Irby Moncre, president.

Bristol—Woodworking Plant.—J. A. Wilkerson of Meadow View, Va., will establish woodworking plant at Bristol.

Durham—Machine Shops.—Wm. Minnigerode, Ninth and Main streets, Lynchburg, Va., has leased old railroad machine shop, roundhouse, etc., at Durham, and will equip for general machine repair work.

Emporia—Hardware Company.—Chartered: Greenville Hardware Co., with authorized capital of \$10,000, and J. B. Bailey, president.

Emporia—Machine Company.—Emporia Machine Co., with authorized capital of \$5000, has been incorporated, with C. L. Vincent, president.

Fredericksburg—Telephone System.—City has granted franchise to Southern Bell Telephone & Telegraph Co. for installation of telephone system.

Freeling—Coal Mines.—Freeling Coal & Coke Co. has been organized, with capital of \$30,000, for developing coal mines, by W. R. Richards and others.

King and Queen C. H.—Cannery.—Mantapke Cannery Co. will enlarge cannery.

Lynchburg—Coal Mines.—Campbell County Mineral Co. has been incorporated, with capital of \$15,000, for developing mineral resources of Campbell county. H. T. Lusk of Wapakoneta, Ohio, is president; J. W. Rupert, Spencerville, Ohio, vice-president; Thos. Whately, Kow, Va., secretary, and J. C. Clay, Marysville, Va., treasurer.

Lynchburg—Heating Apparatus.—New steam-heating plant will be installed in city jail. Address W. B. Bligbie, chairman council committee.

Norfolk—Woodworking Corporation.—Chartered: Woodworking Corporation of Norfolk, with capital of from \$10,000 to \$50,000. William B. East is president.

Norfolk—Art-glass Company.—Norfolk Art Glass Co. has been incorporated, with capital of from \$5000 to \$25,000, for manufacture of leaded art glass, beveling metal sash, silvering of mirrors, etc. Harry B. Burrows is president; address, 314 Granby street.

Norfolk—Land Improvement.—Chartered: Ocean View Residence Park Corporation, with authorized capital of \$50,000, and C. C. Cobb, president.

Norfolk—Land Improvement.—Hardy Homestead Co. has been organized, with capital of \$25,000, for improving the Hardy tract of land near Berkeley as a residence section. Incorporators include J. W. Hough, W. L. Berkeley, Alan G. Burrow and others.

Petersburg—Tobacco Factory.—Bland Tobacco Co. has awarded contract to Benjamin Harrison for erection of its proposed four-story brick building 50x50 feet.

Portsmouth—Oil-refining Company.—Oliver Oil Refining Co. will resume operations.

Richmond—Automobile Factory.—Southern Machine Co. has been organized with A. C. Goode, president; E. Harvey Spence, vice-president, and W. D. Leake, secretary-treasurer, for manufacture of automobiles.

Richmond—Mercantile.—Chartered: Cox & Shea Co., with capital of from \$5000 to \$15,000, and P. M. Fitzgerald, president.

Purcellville—Flour Mill.—John R. Smith & Co., conducting general milling business, has incorporated as the John R. Smith Milling Co., with capital of \$25,000. S. H. Hansbrough of Winchester, Va., is president; Shirley Carter of Winchester, vice-president; John R. Smith of Purcellville, general manager and treasurer.

Richmond—Mercantile.—Chartered: J. E. Quarles Co., with capital of \$5000. Chas. B. Cooke is president.

Ronoke—Chartered: Southern Explorative Co., with capital of \$50,000, and E. W. Robertson, president.

Suffolk—Feed and Fuel Company.—Suffolk Feed & Fuel Co. has been incorporated, with authorized capital of \$25,000. Geo. L. Barton is president.

Williamsburg—Electric Plant.—William and Mary College will install \$5000 electric-light plant. Contract has been awarded.

Williamsburg—Knitting Mill.—Williamsburg Knitting Mill Co. will increase capital from \$50,000 to \$80,000 to enlarge its plant.

WEST VIRGINIA.

Belington—Industrial.—Chartered: Belington Board of Trade, by J. E. Keyser and others.

Boone—Coal Mines.—Croft & Smoot of Boone have purchased for development coal properties in Boone county.

Clarksburg—Planing Mill, etc.—Parr Lumber & Planing Mill Co. has been incorporated, with capital of \$50,000, by Anson D. Parr, Clarence E. Parr, M. F. Snider and Lynn L. Horner, for manufacture of lumber.

Clarksburg—Chair Factory.—Colonial Chair Co. of Cortlandt, N. Y., will shortly award contracts for \$50,000 worth of buildings and machinery for its plant, which will be removed to Clarksburg. Lewis E. Hayes, president of the company, is at present in Clarksburg supervising plans.

Fairmont—Contracting.—Ferguson & Edmonson Co., for conducting general contracting and construction business, has been incorporated, with capital of \$50,000, by Geo. A. Ferguson of Shilstone, W. Va.; Fred W. Edmonds of Fairmont, Francis Ferguson of Pittsburg, Pa., and others.

Fairmont—Machine Shops.—It is reported that the Baltimore & Ohio Railroad Co. will remove its Grafton (W. Va.) shops to Fairmont.

Grafton—Coal Mines.—Mohawk Smokeless Coal Co. has been incorporated for development of coal mines, manufacture of coke, etc., with capital stock of \$450,000, by Thomas M. Sprowl of Huron, Ohio; Arthur Cobb of Louisville, Ky.; Frank B. Chilson, Palmsville, Ohio; G. E. Beckwith, Cleveland, Ohio, and others.

Huntington—Oil and Gas Wells.—Virginia-Kentucky-Ohio Oil & Gas Co. has been organized, with capital of \$250,000, for development of 170 acres of oil and gas lands which it has leased. J. C. Beebe is president and general manager; R. E. Vickers, vice-president; P. A. Rutledge, secretary, and J. M. Hawkins, treasurer.

Lincoln County—Timberland Development.—J. W. Hambrick of Huntington, W. Va., has purchased 2900 acres of timber land in Lincoln county, and will erect mills for developing the property.

Logan County—Coal Mines.—James M. Selvey and associates of Grafton, W. Va., have purchased and will develop 26,000 acres of coal lands in Logan county.

Marshall County—Coal Mines.—Summit Coal Co. has been organized in New York, with capitalization of \$10,000,000, for the development of 30,000 acres of coal land in Marshall and Ohio counties, West Virginia. Output will be 4000 tons a day. Geo. H. Proctor of New York is president; I. C. Smith of Connelisville, Pa., general manager; T. J. Yost, treasurer, and Henry B. Twombly, secretary. Address 170 Broadway, New York.

Morgantown—Slate Quarries, etc.—Superior Slate Manufacturing Co. has been incorporated, as recently reported, and organized with Orran W. Kennedy of Unlontown, Pa., president and general manager; Samuel M. Graham of Unlontown, treasurer; Chas. F. Kefover of Unlontown, secretary; Morton Van Voorhis of Van Voorhis, W. Va., assistant secretary, and Geo. B. Geran of Morgantown, assistant general manager. Company has authorized capital of \$150,000, and character of the industry includes quarrying of slate for roofing purposes, slate bottoms for billiard tables, slate for mantel-pieces, toilets, etc.; will also manufacture fireproof brick for building purposes out of the waste. Plant has not yet been established, so far as construction of buildings and purchase of machinery is concerned. Main offices will be in Martinsburg, W. Va., and Unlontown, Pa. Address for further particulars Geo. B. Geran.

New Cumberland—Coal Mines and Coke Ovens.—It is reported that the Hancock Coal & Coke Co., composed of New York and New Jersey capitalists, has purchased 23,000 acres of coal lands in Hancock county for \$2,300,000, and will open up mines at once; will also erect two large coke plants on Kings creek, in Hancock county. It is said that the real purchaser of the property is the United States Steel Corporation.

Parkersburg—Construction Company.—George Street Bridge Co. has been incorporated, with capital of \$100,000, by J. N. Camden, S. W. Goff, W. W. Walker, W. W. Jackson and others for conducting general construction business.

Parkersburg—Oil and Gas Company.—Berea Oil & Gas Co. has been incorporated, with capital of \$50,000, for development of oil, gas and coal lands, by Thos. L. Shields, L. E. Simmons, Jr., G. D. Heaton and others.

Roe—Coal Mines.—Hughes Creek Coal Co. has been incorporated, with capital of \$50,000, for development of coal mines, by John Q.

Dickenson, S. H. Montgomery, John B. Lewis, Malcolm Jackson and others, all of Charleston, W. Va.

Shepherdstown—Knitting Mill.—Penant Knitting Mills is adding new machinery.

Union—Educational.—Chartered: The Union Academy, with capital of \$3000, by John L. Rowan, J. D. Logan, H. M. Brown and others.

Union—Oil Wells.—Brush Creek Oil & Gas Co. will operate in conjunction with the Pence Springs Oil & Gas Co. of Hinton, W. Va., in developing new oil and gas properties recently purchased at Cashmere.

Union—Telephone System.—Greenville Telephone Co. contemplates extending its system.

Weston—Well-drilling.—Board of directors of Hospital for Insane has awarded contract to Danzer & Ford for drilling of six artesian wells.

West Virginia—Coal Mines, Coke Ovens, etc.—Lakeports-Atlantic Coal & Coke Co. of Pittsburg, Pa., has been organized, with capital of \$25,000, for development of coal properties in West Virginia. J. H. Hemming, C. E. Pool, I. C. Ewing and W. A. Menster of Elkinsburg, Pa., and Henry Cooper of Bellevue, Pa., are interested.

Wheeling—Coal Mines.—Hane & Hummer Coal Co. has been incorporated, with capital of \$25,000, by H. B. Hane, F. E. Guthrey, D. L. Hummer and others, all of Marion.

OKLAHOMA TERRITORY.

Chester—Townsite Company.—Chester Townsite Co. has been incorporated, with \$1000 capital, by Hermon Heyon, F. L. Townsend and S. Ball.

Frederick—Telephone Company.—Southwest Telephone Co. has been incorporated, with capital of \$15,000, by J. A. McClenahan, E. L. James, C. D. Kirkpatrick and others.

Kingfisher—Mercantile.—Chartered: Logan, Snow & Co., with capital of \$100,000, by G. H. Logan and others.

Lawton—Mining.—Mountain Pass Mining Co. has been incorporated, with capital stock of \$1,000,000, by James M. Powers, Frank M. Robinson, F. G. Hanks, J. E. Jaerlis and others.

Lawton—Gold Mines.—Rainbow Gold Mining Co. has been incorporated, with capital stock of \$1,000,000, by F. O. Ayres, J. F. Winton, J. E. Compton and A. W. Allen.

Lawton—Gold Mines.—Frisco Mining & Milling Co. has been incorporated, as recently reported, for development of gold mine; capital to be invested \$300,000. D. I. Cooper, Lawton, O. T., is engineer in charge. Machinery or equipment has not as yet been purchased.

Lawton—Mining.—Golden King Mining & Milling Co. has been incorporated, as recently reported, for development of seven gold-bearing properties near Lawton, and will install necessary machinery at once to mine and mill the ore, using the cyanide process. N. F. Shabert, Lawton, O. T., is engineer in charge; capital to be invested \$50,000.

Lawton—Mining.—Chartered: Elk Mining & Milling Co., with capital stock of \$2,000,000, by John F. Hall, J. S. McDuffie, J. Robert Gilliam, John W. Gillespie and G. H. Gosa.

Lawton—Mining.—McMillan Mining Co. has been incorporated, with capital stock of \$500,000, by August Jurgens and David G. Howell of Meers, D. A. McMillan of Bristow, I. T.; C. C. and A. E. Hammonds, J. N. Churchwell, D. A. Jacobs, J. W. Sampson and others.

Mt. Sheridan—Mining.—Middle West Gold & Silver Mining Co. has been incorporated, with capital stock of \$500,000, by S. P. Iles and F. C. Davis of Mt. Sheridan, J. L. Powers, Geo. E. Quinby, Fred Basom of Joplin, Mo., and others.

Oklahoma City—Construction.—Owen Construction Co. has been incorporated, with capital stock of \$500,000, by Thomas Marshall and others.

Pond Creek—Telephone Company.—Rural Telephone Co. has been incorporated, with capital of \$5000, by H. F. Williams, J. H. Dunkin and A. D. Millian.

Shawnee—Mercantile.—Chartered: Longmire-Draper Mercantile Co., with capital of \$25,000, by W. W. and A. M. Longmire and J. M. Draper.

Snyder—Mining.—Oklahoma-Wichita Mining & Milling Co. has been incorporated, with capital of \$250,000, by O. E. Churchill, P. E. Griffin, W. B. Snook and J. M. Miller.

BURNED.

Aberdeen, Miss.—W. W. Watkins' cotton gin; estimated loss \$6000.

Absokie, N. C.—Machine shops and round-house of the Wellington & Powellville Railroad; estimated loss \$10,000.

Baltimore, Md.—Asphalt and crushing plant of Isaac S. Filbert; estimated loss \$4000.

Cornettville, Ky.—Cornettville Hotel damaged to extent of \$3000.

Dalton, Ga.—W. F. Summerour's cannery factory.

Fayetteville, N. C.—Weed Distilling Co.'s plant; estimated loss \$5000.

Jackson, Miss.—J. W. Johnson's cotton gin; estimated loss \$3000.

Jefferson City, Tenn.—Smith, Huggins & Co.'s flour mill and warehouse; estimated loss \$10,000.

Lacey, Ky.—Plant of Lackey Milling Co.; loss \$4000.

Lawsonia, Md.—Ausbury Shirt Factory; estimated loss \$8000.

Monroe, La.—Monroe Grocery Co.'s warehouse; estimated loss \$15,000.

Palestine, Texas.—Cotton gin and grist mill of M. Reed.

Washington, D. C.—S. S. Daish & Sons' grain elevator; estimated loss \$100,000.

Webster, Md.—Harry Smith's machine shops; estimated loss \$5000.

BUILDING NOTES.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Baltimore, Md.—Church.—Permit has been issued to Metropolitan Methodist Church for erection of three-story brick Sunday-school hall to cost \$30,000.

Baltimore, Md.—Church.—Bethlehem Lutheran congregation has awarded contract to John P. Teal at \$15,000 for erection of its proposed new stone structure.

Baltimore, Md.—Studio.—Harry J. Jeffers will erect three-story brick studio to cost \$4000, and has awarded contract for same to H. H. MacLellan.

Baltimore, Md.—Dwellings.—Edward J. Gallagher will erect row of two-story brick houses to cost \$3600 each.

Baltimore, Md.—Store and Dwelling.—Willis & Mason have contract to build two-story store and dwelling for A. D. Clemens.

Baltimore, Md.—Engine-house.—Board of Awards will open bids October 21 for erection of fire-engine house on Patterson Park avenue, also for hot-water heating apparatus to be put in No. 15 engine-house on Lombard street. Bids must be in separate sealed envelopes addressed to Board of Awards and left with City Register Harry F. Hooper, City Hall, Baltimore, Md. Each proposal must be accompanied by certified check for \$500. Plans and specifications can be seen at office of Inspector of buildings. Bond required and usual rights reserved.

Baltimore, Md.—Store and Dwelling.—Geo. Hoshell will erect three-story brick and stone store and dwelling 18x72 feet at cost of \$5000.

Bedford City, Va.—Hotel.—P. W. Lytle will erect hotel, as recently reported, after plans by Architect Huggins of Roanoke, Va. Building will be of brick, 40x80 feet, and cost about \$15,000.*

Brewton, Ala.—Courthouse.—Bill authorizing Escambia county to issue \$30,000 of bonds for erection of new courthouse has been approved. Address county clerk.

Bristol, Fla.—Courthouse.—Liberty county will build frame courthouse with fireproof and burglar vaults; Cark Baker, supervising architect.*

Buford, Ga.—Business Building.—S. H. Busha will erect three-story business building 100x50 feet.

Camden, S. C.—Hotel Improvements.—Hobkirk Inn, F. W. Eldridge, proprietor, is being improved at cost of \$10,000.

Canton, Miss.—Clerk's Office, etc.—Board of supervisors for Madison county has advertised that bonds will be issued to build fireproof chancery clerk's office and to remodel county jail. Plans are on file for remodeling and improvement of the jail, and board asks for plans and specifications for clerk's office to cost not more than \$5000.

Charlotte, N. C.—Residence.—H. Baker will erect \$10,000 residence in Dilworth.

Chattanooga, Tenn.—Business Building.—Trotter Bros. have had plans and specifications made for erection of five-story brick building; contract will be awarded at once.

Chattanooga, Tenn.—Library.—A. N. Sloan, president, will open bids October 29 for erection of Carnegie Library building. Certified

check for \$500 must accompany each bid. Bond required and usual rights reserved. Board of directors will buy all furniture and hardware and make own contracts for heating, lighting and plumbing. Total contract will amount to \$45,000 for building proper. Plans and specifications can be seen at president's office or at office of R. H. Hunt, architect.

Chattanooga, Tenn.—Business Building.—Stone Fort Land Co. has had plans made by W. T. Downing for erection of five-story building 60x150 feet, to cost \$50,000, which will be occupied by Trotter Bros., grocers.

Clarksburg, W. Va.—Building.—Empire Building Co. has accepted plans and specifications of Holmboe & Lafferty for erection of proposed six-story building.

Clemson College, S. C.—Building.—H. C. Morrison of Augusta, Ga., has contract for erecting the new three-story brick and stone agricultural building (previously reported) at Clemson College; building will be 150x190 feet, and cost \$50,000.

Columbia, Tenn.—Courthouse.—Maury county will appropriate \$100,000 for erection of courthouse. Address county clerk.

Dallas, Texas.—Textile Building.—The Agricultural and Mechanical College has accepted plans by J. E. Shirrine of Greenville, S. C., for erection of building to be equipped for textile instruction; structure to be of brick, two stories high, 54x174 feet, power plant and basement to cost \$25,000. Bids for erection will soon be asked. Dr. D. F. Houston is president of the college.

Dartha, Va.—Dwellings.—Smith & Hampson have contract for building seventy-five miners' dwellings for Dartha Coal Co.

Earlington, Ky.—Residence.—W. L. Gordon, Jr., will erect two-story residence.

El Dorado, Ark.—Jail.—Union county will build \$25,000 jail. Address the county clerk.

Fayetteville, N. C.—Sanitarium.—Dr. W. H. Kugler of Chester, Pa., has purchased property near Fayetteville, and will build sanitarium.

Florence, Ala.—City Hall.—City has purchased site and will soon begin erection of \$10,000 City Hall. Address The Mayor.

Fort Morgan, Ala.—Guardhouse Improvement.—A. D. Raymond, quartermaster, will receive proposals in triplicate until November 9 for constructing extension to and alterations in guardhouse. United States reserves usual rights. Information furnished on application.

Frostburg, Md.—Storage Building.—John W. George of Cumberland, Md., has contract to build storage building for the German Brewing Co. at Frostburg.

Gainesville, Ga.—Store Buildings.—J. W. W. Simmons will erect brick store buildings.

Gaffney, S. C.—Building.—Bids will be opened October 17 for erection of three-story brick business block. Plans and specifications at office of McMichael & Hunter, Charlotte, N. C., and F. G. Stacy, Gaffney.

Goshen, Va.—Sanitarium.—Dr. Frank P. Webster of Norfolk, Va., has purchased Hotel Alleghany at Goshen, and will convert it into sanitarium.

Greensboro, N. C.—Business Block.—H. T. Ham has purchased site at \$5000 and will erect business block.

Greenville, Miss.—Club Building.—Elysian Club has awarded contract for erection of its proposed \$20,000 building.

Greenville, S. C.—School.—Plans of Charles E. Choate of Augusta, Ga., have been accepted for proposed new school building.

Houston, Texas.—Club Building.—Thalian Club has purchased site for \$10,000 and will erect three-story building to cost \$25,000.

Jackson, Miss.—Depot.—Union depot at Jackson will be enlarged and improved. Address O. M. Dunn, assistant general superintendent of the Illinois Central Railroad, New Orleans, La.

Jonesboro, Tenn.—Business Block.—E. A. Shipley will erect three-story brick business block 60x100 feet. Architect has not as yet been employed to prepare plans.

Kansas City, Mo.—Dwelling.—Harvey Stiver will erect \$28,000 stone dwelling at 8 East Armour boulevard.

Kansas City, Mo.—Office Building.—Gumble Building Co. has obtained permit for erection of its proposed six-story brick and stone office building, which will be 72x106 feet and cost \$75,000.

Kingwood, W. Va.—Armory and Opera-house.—Kingwood Armory has been incorporated, with capital of \$5000, for building opera-house and armory, by A. B. McCrum, J. B. Ford, P. J. Croggan, J. L. Brown and others.

Lexington, Va.—Science Hall.—W. B. Sneed & Co. of Lynchburg, Va., have con-

tract for erecting new science hall at Washington and Lee University.

Lexington, Ky.—Y. M. C. A. Building.—Young Men's Christian Association building will be erected after plans by Richards, McCarty & Bulford of Columbus, Ohio, and will be four stories, 111x66 feet; cost \$45,000.

Lockesburg, Ark.—Courthouse.—New courthouse to cost \$25,000 will be erected. Plans and specifications have not as yet been prepared. Address county clerk.

Louisville, Ky.—Temple.—Jewish congregation will erect new temple. Address Rabbi Enelow.

Macon, Ga.—Academy.—Academy of Music will be enlarged and improved at cost of \$40,000. Plans will be prepared at once.

Macon, Miss.—Courthouse Improvement.—Z. T. Dorroh, clerk of the board of supervisors, Macon, Miss., will open bids November 2 for repairing courthouse according to plans and specifications on file. Repairs consist of underpinning and putting new foundation around three sides of said building.

Martinsville, Va.—Building.—John T. Wilson of Richmond, Va., has contract at \$27,500 for erection of proposed public building at Martinsville.

Meridian, Miss.—Courthouse.—C. M. Rubush has contract at \$100,636 for erection of new courthouse, for which bids were recently advertised in these columns.

Monroe, La.—Market-house.—J. M. Breard, chairman public building committee, Monroe, La., will open bids November 2 for erection of market-house building according to plans and specifications prepared by L. M. Weathers, architect, Memphis, Tenn., which can be had from J. M. Breard and also at office of architect, Room 25, Cotton Exchange Building, Memphis, Tenn. Certified check for \$500 must accompany each bid. Bond required and usual rights reserved.

New Decatur, Ala.—Y. M. C. A. Building.—L. W. Allen has contract for erecting \$30,000 Y. M. C. A. building.

Newnan, Ga.—Hotel.—A. R. Burdett, C. B. Glover and others will erect three-story brick structure 65x150 feet for hotel purposes.

Newport News, Va.—Elks' Building.—Newport News Lodge, No. 315, B. P. O. E., has purchased site for erection of its proposed new building. Trustees are W. T. Hopkins, R. J. Mackey and W. H. L. Kent.

Norton, Va.—Business Building.—E. H. Oulds will erect large business building.

Ozark, Ark.—Courthouse.—Franklin county contemplates erection of \$25,000 courthouse. Address county clerk.

Petersburg, Va.—Hotel.—W. W. Robinson has contract for proposed improvements to Chesterfield Hotel.

Phenix City, Ala.—Lodge Building.—Phenix City Lodge, No. 141, of Odd Fellows will erect new two-story brick building.

Pound, Va.—Store Building.—Sowards & Sowards will erect \$6000 store building; contract to let.

Raleigh, N. C.—Gymnasium.—University of North Carolina will erect \$25,000 gymnasium, as recently reported. Plans and architects as yet undecided upon.

Raleigh, N. C.—Masonic Temple.—O. A. Robins & Co. have completed designs for proposed Masonic temple building at Raleigh. Contract for erection will shortly be awarded.

Raleigh, N. C.—Church.—First Baptist Church (colored), W. T. Coleman, pastor, 5118 Wilmington street, will erect new brick church 100x50 feet. W. P. Rose, Raleigh, will be the architect.*

Richmond, Va.—Dwellings.—Gilbert J. Hunt will erect five three-story brick dwellings at cost of \$30,000.

Rome, Ga.—City Hall.—Work will soon be commenced on erection of proposed \$10,000 City Hall. Address The Mayor.

Seguin, Texas.—Church.—Methodist congregation will erect \$10,000 edifice. Address the Pastor.

Spring Hope, N. C.—School.—City will erect school building, as previously reported, to cost \$6000. Contract for building not awarded. Address S. E. Eure.

St. Louis, Mo.—Business Building.—Eastern parties have had plans made for erection of 19-story business and office building on property of W. W. Culver.

Tampa, Fla.—Lodge Building.—Knights of Pythias will erect new building.

Thomasville, N. C.—Residence.—W. I. Montgomery of High Point, N. C., has contract to erect \$4000 residence for J. L. Armfield.*

Warrensburg, Mo.—Gymnasium.—Dr. J. I. Anderson, president board of regents of State Normal School, will open bids Novem-

ber 13 for erection and completion of gymnasium to cost not more than \$47,500 and to be built in accordance with plans, details and specifications prepared by Geo. B. McDonald, 720 McGee street, Kansas City, Mo., and which are on file at Normal School and at office of architects. Each bid must be accompanied by certified check for \$500. Bond required and usual rights reserved.

Washington, D. C.—Union Station.—The Pennsylvania Railroad Co. has decided not to let to contract the erection of its proposed \$5,000,000 union station in Washington, and will erect the building itself. Roydhouse, Arrey & Co. of Philadelphia, Pa., are to superintend the construction.

West Point, Va.—Bank Building.—L. E. Mumford Banking Co. will erect brick building.

Whitesburg, Ky.—Jail.—Letcher county will improve jail at cost of \$4000. Address R. D. Lewis.

Wickliffe, Ky.—Courthouse.—Contract for building new courthouse will be let at public outcry at courthouse door on October 31; said building to be constructed in accordance with plans and specifications adopted and in custody of county clerk of Ballard county; W. M. Powell, W. J. Hagood and Henry Watwood, committee.

Winder, Ga.—Church.—Methodist congregation will erect \$10,000 church; Rev. A. M. Williams, pastor.

Winston-Salem, N. C.—Hotel.—H. C. Risdon, 431 Bond Building, Washington, D. C., and associates are organizing the Hotel Forsyth Co. for erection of four-story hotel 100x200 feet, to cost \$60,000. Crosby & Warren of Paterson, N. J., and New York city are the architects.

Yellville, Ark.—Courthouse.—Marion county will build \$20,000 courthouse. Address county clerk.

RAILROAD CONSTRUCTION.

Railways.

Alamos, Sonora, Mexico.—The Southern Sonora & Alamos Railroad Co. is reported to have secured a concession for building a railroad from Alamos to Navajos, twenty-two miles.

Anderson, S. C.—The city of Anderson has voted \$50,000 worth of bonds to aid the proposed Tennessee, Georgia & South Carolina Railroad.

Atlanta, Ga.—Mayor Howell is quoted as saying that a Chicago capitalist has under consideration a plan for an electric railway from Atlanta to Dawsonville.

Atlanta, Ga.—Construction is reported under way near Marietta on the Atlanta & Marietta Electric Railway. The line will be about eighteen miles long.

Austin, Texas.—The Trinity & Brazos Valley Railway Co. is considering a plan to build from Mexia to Beaumont, about 120 miles. R. H. Baker of Austin is vice-president and general manager.

Beaumont, Texas.—Mr. Ed Kennedy writes the Manufacturers' Record that the proposed Houston, Liberty & Sour Lake Interurban Line will be fifty-seven miles long. It will connect with the Beaumont & Sour Lake road, and nearly all of the right of way has been secured. The track will be laid with 72-pound T rails. The bonds have been contracted for and will be handled by the Municipal Bond & Securities Co. of Cincinnati, Ohio.

Biloxi, Miss.—The franchise for an electric railway from Biloxi to Pass Christian has been extended for another year.

Birmingham, Ala.—The United States District Court has authorized H. W. Coffin, receiver for the Donaldson Construction Co., to sublet its unfinished work on the East & West Railroad to Brewer & Jones.

Brunswick, Ga.—Reported that the Brunswick & Birmingham Railroad has purchased the Hawkinsville & Florida Southern Railroad, and will build a connection between the roads. Bird M. Robinson is president of the Brunswick & Birmingham.

Chihuahua, Mexico.—A preliminary survey has been made for a branch from the Chihuahua & Pacific Railroad from El Carpio Station to Rincon, about sixty miles. C. L. Graves is general manager, and H. W. Edwards, chief engineer.

Gulfport, Miss.—President J. T. Jones of the Gulf & Ship Island Railroad Co. writes the Manufacturers' Record pronouncing as entirely without foundation the report that he is connected with or interested in the proposed Natchez & Gulf Railroad.

Kansas City, Mo.—The Kansas City, Mexico & Orient Railway is reported to be making two lines to reach the Ocampo mining district in Mexico, one starting from Boy-

cona and the other from Minaca. M. P. Paret is chief engineer at Kansas City.

Kansas City, Mo.—Some track is reported laid on the electric railway from Kansas City to Olathe, Kan., eighteen miles.

Knoxville, Tenn.—W. J. Oliver & Co. are reported to have completed about ten miles of grading along the Little Tennessee river for the Rabun Gap extension of the Southern Railway, and are now working toward Maryville.

Lawton, O. T.—A contract has been awarded to the Missouri & Kansas Construction Co. to build part of the Colorado, Oklahoma & Texas Railroad from Lawton to Duncan.

Lexington, Va.—Reported that the proprietors of the Buena Vista Extract Works will build a narrow-gauge railroad eight miles long from Vesuvius Station to Monticello, through Tye river gap.

Lineville, Ala.—The sum of \$12,000 is reported raised for the proposed railroad from Lineville to Pyliton.

Louisville, Ky.—The report that the Louisville & Nashville Railroad will build an extension from Pyliton to Roanoke, Ala., is officially denied.

Memphis, Tenn.—Lorimer, Gallagher & Walsh of Chicago have the contract for and have just begun the work of elevating the Illinois Central Railroad tracks in the vicinity of the Wolf and the Loosahatchie rivers.

Memphis, Tenn.—The Union Railway will, it is stated, build a large freight yard immediately east of Kansas City Junction, the yards to have between six and seven miles of track.

Memphis, Tenn.—The Shelby County Traction Co. has filed its charter. It proposes to build an interurban electric railway from Memphis to Collierville, eighteen miles, via Aulon, Buntyn, White Station, Ridgeway, Germantown, Forest Hill, Raleighs and Neville. The incorporators are T. J. Latham, H. C. Williamson, Thomas Wellford, J. M. Goodbar, J. M. Hill and I. B. Hudson.

Mexico, Mexico.—The National Railroad of Mexico is reported to be surveying for a branch from the City of Mexico to La Blanca mines, twenty-eight miles. R. T. Macdonald is chief engineer.

Mobile, Ala.—It is stated that the northern terminus of the Mobile, Jackson & Kansas City Railroad will be at Bolivar, Tenn., instead of Jackson, Tenn., as was first proposed. The distance from Middleton to Bolivar is fifty-five miles, as compared with seventy-five miles to Jackson. W. W. Hayden is engineer of construction.

Moundsville, W. Va.—W. D. Alexander of Moundsville has, it is reported, applied for an electric railway franchise from Moundsville to McMechen.

Nashville, Tenn.—A survey has been made for the proposed McMinnville, Woodbury & Nashville Electric Railway by Felix R. Smith and H. B. Wright. It is also stated that rights of way have been secured, and that the construction contracts are to be let within a month.

Nashville, Tenn.—At the annual meeting of the Tennessee Central Railroad it was announced that the line was practically completed from the bridge at Nashville to Clarksville, and that all will be finished to Hopkinsville by October 20.

Paden City, W. Va.—The Padon City, Middlebourne & Salem Railroad Co. has been chartered to build and operate an interurban railway connecting the three places. The incorporators are Thos. A. Watkins, George R. Wallace of Pittsburgh, Pa.; Robert Miller, Padon City, W. Va.; George E. Work of Sistersville, and E. L. Robinson of New Martinsville.

Pine Bluff, Ark.—McArthur Bros. of Chicago are reported to have the grading contract for the Pine Bluff & Western Railway from Sherman to Benton, twenty-five miles, and are to begin work at once. W. T. Radford is chief engineer at Pine Bluff.

Roanoke, Va.—The Norfolk & Western Railway is reported to have finished a survey from Mendota, Va., to Narrows, on the Radford division of the Norfolk & Western, 107 miles, but it is not known whether the line will be built. C. S. Churchill is chief engineer.

Rogers, Ark.—Mr. J. A. C. Blackburn writes the Manufacturers' Record concerning the plan to build an electric railway from Eureka Springs to Huntsville, about thirty miles, saying that the company has not yet organized, but that the road can be built cheaply, as the line selected follows a dividing ridge for almost the entire distance, and only one bridge will be necessary. It is also contemplated to extend the line fifty or sixty miles further southeast beyond the head of Buffalo.

Shawnee, O. T.—The Shawnee & North-eastern Railway, capital \$5,000,000, has been chartered to build a railroad from Wichita Falls, Texas, to Claremore, I. T., about 300 miles. The incorporators are A. E. Nelson, C. W. Kerfoot, H. G. Beard, B. B. Blakney, W. H. Mabon, W. F. Callahan, M. J. Bentley and D. W. Bell, all of Shawnee.

Stockton, Ark.—W. H. Wood of Nevada has made a survey from Stockton to Eldorado Springs, nineteen miles, for the possible construction of a railroad.

St. Louis, Mo.—The Wabash Railroad Co. has decided to issue \$10,000,000 of bonds for terminal improvements at various points, including St. Louis and Kansas City.

St. Louis, Mo.—Reported that the St. Louis, Iron Mountain & Southern Railroad has secured seventy-five acres of land for terminals at Helena, La. H. Rohwer is chief engineer at St. Louis.

Wichita, Kan.—The Wichita, Arkansas Valley & Denver Railroad Co. has been granted a charter to build a line from Denver, Col., through Kansas and Oklahoma to Henrietta, I. T., about 650 miles. The stockholders are W. F. Brown of Moran, Kan.; F. M. Cyen, John Roy, A. J. Roy and C. A. Latham, all of Wichita.

Wichita Falls, Texas.—Concerning the report that the Wichita Valley Railway will build from Wichita Falls northeast to Benavue, W. E. Kaufman, secretary and treasurer, writes the Manufacturers' Record: "We are now completing location of twenty-five miles of road from Wichita Falls in a northeast direction to Red river, and will receive bids for grading about November 1. John W. Field is engineer in charge at Wichita Falls, Texas, where profiles can be seen."

Wichita Falls, Texas.—Reported that the Wichita Valley has let the contract for building an extension from Wichita Falls to Benavue, twenty-five miles. Col. Morgan Jones is president.

Wise, Va.—A letter to the Manufacturers' Record says that construction has begun on the Virginia & Kentucky Railroad from Ramsey to Norton, three miles, making the line eight miles long.

Street Railways.

Eufaula, Ala.—A franchise has been granted by the city council to the Eufaula Railroad Co., which is composed of J. P. Foy, B. B. McKenzie, R. A. Ballowe, C. A. Martin, H. C. Holleman and A. L. Brassell. An electric railway is to be built in the city and also as far as Abbeville, about twenty-five miles.

Fort Worth, Texas.—An electric railway to Rosen Heights, two and one-half miles, will, it is stated, be built by Sam Rosen and H. A. Perlaten.

Greenville, Texas.—Col. R. F. Sherman and others are reported interested in a plan to build an electric street railway in Greenville.

Greenwood, Miss.—The Greenwood Electric Railway Co. proposes to extend its line from Greenwood to Black Hawk, about eighteen miles.

Jackson, Miss.—Reported that the Jackson Railway & Electric Light Co. will build several extensions on which General Manager Lorenz is now figuring.

Louisville, Ky.—Construction work is being pushed on the Jeffersontown Electric Railway, it being proposed to have it in operation by December 1.

Opelika, Ala.—Rush Taylor of Opelika has applied to the city council for an electric street railway franchise. It is also proposed to extend the line to Auburn.

Richmond, Va.—The work of rebuilding the Seven Pines Railway will, it is stated, begin immediately.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Alloys.—See "Saws."

Ammunition Hoists.—E. Eveith Winslow, captain engineers, engineer office, U. S. A., Room 2, custom-house, Norfolk, Va., will

open bids November 11 for furnishing and installing chain ammunition hoists at Fort Monroe, Va. Information furnished on application.

Roller.—See "Elevating and Conveying Machinery."

Roller.—R. P. Paddison, Point Caswell, N. C., wants 30-horse-power horizontal return tubular marine boiler for small steamboat.

Roller.—Battley Machinery Co., Rome, Ga., is in market for two 150-horse-power second-hand return tubular boilers.

Boilers.—See "Can-factory Equipment."

Boilers.—Fleider & Allen Manufacturing Co., Atlanta, Ga., desires prices on second-hand boiler twelve to twenty horse-power, low pressure, suitable for attaching to small dry-kill; also desires prices on 75-horse-power second-hand boiler f. o. b. Atlanta.

Boiler and Engine.—See "Concrete Mixer."

Boiler and Engine.—W. A. Mulcahy, 237 Carroll street, Woodberry, Baltimore, Md., wants prices on 35-horse-power horizontal engine and 30 horse-power vertical boiler.

Bone-meal Machinery.—Atlanta Metal & Bottle Co., Atlanta, Ga., wants catalogues and prices, etc., from manufacturers of bone-meal machinery.

Brick Machinery.—F. B. King, Houston, Texas, will want hydraulic brick machinery, filling machinery and kaolin mills.

Brick Machinery.—See "Quarrying Equipment."

Brick Machinery.—Thorsby Lumber & Manufacturing Co., Room 12, 78 La Salle street, Chicago, Ill., wants estimates on brick machinery.

Bridge Construction.—J. C. Herring, city engineer, Jefferson City, Mo., will later on receive bids on superstructure for bridge to be 39-foot span, 15-foot roadway, five-foot sidewalk on one side, plate girder, whiplike truss proportioned to carry a load of 150 pounds to square foot.

Building.—James Knox Taylor, supervising architect, Treasury Department, Washington, D. C., will open bids November 9 for construction (except heating apparatus, electric wiring and conduits) of the extension of United States postoffice and courthouse at Kansas City, Mo., in accordance with drawings and specifications, copies of which may be had at office of supervising architect or at office of custodian at Kansas City.

Building Material.—De Leon & Lopez, Atlanta, Ga., want prices on terra-cotta, art ceramic tile, art glass, composition capitals, etc.

Building Material.—Cowell & Love, Huntsville, Ala., want prices on gray pressed brick, mosaic tile, interior decorations, oak finish, etc.

Building Material.—W. I. Montgomery, High Point, N. C., wants building material.

Building Material.—P. W. Lytle, Bedford City, Va., wants heating apparatus, brick, etc., for hotel building.

Building Materials.—W. T. Coleman, 5118 Wilmington street, Raleigh, N. C., wants prices on brick, lumber, slate, doors, stained windows, window and door frames, steel ceiling, etc., for church.

Can-factory Equipment.—Southern Can Co., Limited, Fred. D. Becker, secretary, 305 Hennen Building, New Orleans, La., wants bids for either steam, gasoline or electric-power motors, boilers, automatic canmaking machinery tools, belting and shafting for 25-horse-power basis. Address secretary for further details.

Cannery Machinery.—H. L. Stricker, Calvert, Texas, wants estimates on machinery for cannery.

Canning Factory.—Brown-Kyle Company, Houston, Texas, wants addresses of manufacturers of small canning outfits; power from six to twelve horse-power.

Concrete Mixer.—Lawrence Stone & Construction Co., 343 Cherokee street, St. Louis, Mo., wants concrete mixer, elevating and hoisting machinery for conveying stone to and from cars, overhead cable or trolley transfers and 5 to 10-horse-power boiler and engine.

Dredging Machinery.—Savannah-Florida Phosphate Co., Hernando, Fla., wants machinery complete for dipper dredge, one to one and one-half yard capacity bucket.

Drilling Equipment.—Georgia Vitified Brick & Clay Co., Augusta, Ga., wants information relative to apparatus suitable for drilling through hard shale for blasting.

Electrical Equipment.—See "Can-factory Equipment."

Electrical Equipment.—E. O. Painter & Co., Deland, Fla., want electrical generator of about fifty lights.

Elevating and Conveying Machinery.—See

board Product Co., Georgetown, S. C., D. H. Greene, president, wants locomotive boiler, sixty to eighty horse-power, elevating and conveying machinery.

Elevating Equipment.—See "Concrete Mixer."

Engine.—J. L. Roberson, Naylor, Ga., wants 20-horse-power engine, steam gauge and ball springs.

Heating Apparatus.—John P. Teal, Baltimore, wants prices on heating apparatus for church. Address 971 Broadway.

Heating Apparatus.—See "Building Material."

Heating System.—Contract for installing direct system of steam heating in school building will be awarded October 26. Address D. C. DuPre, secretary, Greenwood, S. C.

Hoisting Machinery.—See "Concrete Mixer."

Kaolin Mills.—See "Brick Machinery."

Knitting Machines.—Knoxville Knitting Mills Co., Knoxville, Tenn., wants information regarding full-fashioned knitting machinery, 200-needle gauge, for manufacturing fine underwear.

Laundry Equipment.—D. E. Whetstone, Lake City, Fla., wants second-hand wringer, one washer and one sheet and napkin ironer.

Library Equipment.—Cowell & Love, Huntsville, Ala., want prices on steel book stacks, window screens, furniture, rugs, etc., for library.

Machinery.—Southern Engineering Co., Perry Moses, manager, Sumter, S. C., wants to correspond with manufacturers of machines and mechanical appliances who wish to establish an agency with territory in the Carolinas, Georgia and Florida.

Magnallum.—See "Saws."

Mill Supplies.—See "Can-factory Equipment."

Mining Equipment.—John L. Ray, Albertville, Ala., wants machinery for development of manganese mines.

Paving.—J. C. Herring, city engineer, Jefferson City, Mo., will open bids October 26 for macadamizing about 3450 square yards of street and alley and for construction of 900 feet of double guttering and 1080 lineal feet of combined curb and gutter.

Postoffice Fixtures.—M. C. Wilcox, Mt. Airy, Ga., wants names of firms furnishing postoffice fixtures.

Pottery Equipment.—B. Remmers & Sons, 325 The Bourse, Philadelphia, Pa., are in the market for machines for making common flower pots from clay.

Quarrying Equipment.—Superior Slate Manufacturing Co., Geo. B. Gerau, manager, Morgantown, W. Va., will purchase complete equipment for quarrying slate and for manufacture of fire-brick for building purposes.

Saw-mill Machinery.—Thorsby Lumber & Manufacturing Co., Room 12, 78 La Salle street, Chicago, Ill., wants estimates on saw-mill machinery.

Saws.—Chas. A. Scott, Granite Building, Rochester, N. Y., wants addresses of makers of a back-saw blade termed the "Horseshoe Brand"; also wants addresses of firms from whom can be bought at wholesale rates an alloy termed "Magnallum."

Sewer Pipe.—J. C. Herring, city engineer, Jefferson City, Mo., will receive bids for about 1783 feet of pipe sewer, eight and ten inches, with 3 M. H. s. 2 F. T. s and 4 L. H. s.

Shingle Machine.—A. M. Prince, Holly Ridge, N. C., wants to purchase shingle machine.

Shingle Machinery.—Bollinger Bros., Jopka, Tenn., want complete outfit of shingle machinery.

Spring Motors.—F. E. Church, 8 Teunis street, Albany, N. Y., wants addresses of parties manufacturing or handling spring motors.

Steel Cages.—I. T. Foster, chairman county court, Morristown, Tenn., wants bids on two steel cages for jail.

Street Paving.—D. D. Bryan, city secretary, Houston, Texas, will open bids October 19 for construction of vitrified brick pavement as per plans and specifications on file in city engineer's office. Certified check for \$1500 must accompany each bid. Bond required and usual rights reserved.

Street Paving.—George Edward Smith, mayor, Frederick, Md., will open bids October 23 for paving approximately 1775 square yards with vitrified fire-clay paving block and furnishing and setting 780 lineal feet of dressed granite curbstones. Detailed plans may be seen at mayor's office, and specifications and forms of proposals may be obtained from the mayor, or from T. Chaikley Hatton, consulting engineer, Wilmington,

Del. Each bid must be accompanied by certified check for \$250. Usual rights reserved.

Swing Factory.—Boling Bros., Jopka, Tenn., want machinery for lawn-swing factory.

Tank Cars.—Bowen & Street Equipment Co., Norfolk, Va., is in market for tank cars, and wants prices, location and condition of same.

Tiling Machinery.—See "Brick Machinery."

Vaults.—County commissioners Liberty county, Bristol, Fla., want estimates on vaults for courthouse.

Water Mains.—S. Behrends, chairman, Wilmington, N. C., will open bids October 17 for laying and constructing 949 feet of six-inch cast-iron water mains, with hydrants, increasers, valves and other appurtenances as required by plans and specifications, which may be seen at city clerk and treasurer's office. Usual rights reserved.

Water Motor.—"Yankee" Meere, proprietor of the Drummer Printery, Leconte, La., is in market for two-horse-power water motor to run one 8x12 and one 14x22 press.

Water-works.—John G. Decker, mayor, Owensboro, Ky., will open bids October 31 for following items for system of water-works: Brick pumping station and chimney, two concrete reservoirs and suction well,

three water-tube boilers, two feed pumps and feed-water heater, two compound horizontal duplex condensing pumping engines of 3,000,000 gallons per twenty-four hours capacity each, with surface condensers; Corliss cross-compound air compressor of 200 cubic feet of free air per minute capacity, with surface condenser, intercooler and receiver; steam, exhaust, air, suction and discharge piping of the station. Plans and specifications are on file in city engineer's office and at office of consulting engineer, John P. Force, 37-42 Dispatch-Butler Block, Columbus, Ohio. Certified check for 5 per cent. of amount of each bid must accompany proposal. Bond required and usual rights reserved.

Well-drilling.—B. B. Buck, captain and quartermaster Sixteenth Infantry, constructing quartermaster, Fort McPherson, Ga., will receive bids in triplicate until October 20 for furnishing all labor and material necessary and sinking one 10-inch tubular deep well. Specifications and full information furnished on application. United States reserves usual rights.

Window Screens.—See "Library Equipment."

Woodworking Machinery.—W. H. Nickerson, Morrison, Va., wants shingle machine and slack barrel head rounder.

the pumps recommended by the Associated Factory Mutual Insurance Companies.

Use Powhatan Clay Bricks.

In the erection of Southern buildings of all kinds Southern-made bricks have been largely used. The Powhatan Clay Manufacturing Co. of Richmond, Va., has been prominent in furnishing the supply. It reports the following structures as those which have used its product recently: Courthouses at Albany, Abbeville and Washington in Georgia; Southern and Norfolk & Western station at Winston, N. C.; Atlantic Coast Line stations at Washington and Wilmington, N. C.; Soldiers' Home buildings at Johnson City, Tenn.; Hibernia Bank and Trust Building, New Orleans; Gibbs Memorial Art Building, Charleston, S. C.; Bank of Georgetown, Georgetown, S. C.; Winnie Davis Memorial Hall, Athens, Ga., and various others. Powhatan product includes cream white, buff, silver gray, salt and pepper gray, iron spot and other face bricks.

Minnigerode's Machinery Business.

Many machinery warehouses are catering to the great demand in the South for mechanical equipment of all kinds. Both new and second-hand equipment is called for to be installed in new and enlarging manufacturing. Wm. Minnigerode of Ninth and Main streets, Lynchburg, Va., has been supplying a large clientele, and in order to even more efficiently and promptly serve his customers is greatly improving his facilities. Mr. Minnigerode has leased the large machine shop, roundhouse and office of the Norfolk & Western Railway at Durmid, and will have a complete modern equipment for repair work of all kinds. He will buy and sell both new and second-hand equipment, putting the latter in thorough repair before offering it for sale. The Minnigerode stock includes engines, boilers, pumps, hoisting engines, rock drills, rock crushers, locomotives, cars, machinery for contractors, railroads, mining companies, lumber mills, etc.

Price Machinery Co.

That the South is demanding the very best possible machinery in its multitude of industrial enterprises is evident in the number of the leading machinery builders represented in that section. Norfolk, Va., is a center for the distribution of mechanical equipments of all kinds, and in that city there is located the S. M. Price Machinery Co. This corporation is well known to Southern buyers, and it reports that present inquiries indicate a large volume of trade to be closed and attended to during the next several months. The Price Company represents such well-known designers and builders as the Erie City Iron Works, American Tool Works Co., Laidlaw-Dunn-Gordon Company, Middletown Machine Co., Dodge Manufacturing Co., Lambert Hoisting Engine Co., Detroit Oak Belting Co., the Lunkenheimer Company and others. These are the representative makers of boilers, engines, machine tools, pumps, steam specialties, etc.

Prevent Shipwrecks.

The Commercial News of San Francisco says: "The wreck of the British bark Gifford calls attention to a subject that has been brought to the attention of the public. Plenty of tugs were on the scene of the wreck ready for service in assisting the unfortunate vessel off; hawsers were, with great difficulty, passed from tug to ship through the heavy seas, and the tugs pulled—only to break the hawsers. Again, losing no end of valuable time, the hawsers were passed to the ship, with the same result. Under worse conditions it will be tried again if the coal in the vessel can be jettisoned, and the vessel holds together so long. Had the tugs been provided with the Shaw & Spiegle Towing Machine the Gifford perhaps would still be on the shore; that no one can determine; but if she was not hauled into deep water it would not have been the fault of the tugs or the hawsers, for in all the years the towing machine has been in use a hawser has never parted that was attached to one, and much more severe tests have been given than the Gifford gave the rescuing tugs." It is worth while knowing that the towing machine referred to is made by the American Ship Winless Co. of Providence, R. I.

Cement-Making Machinery.

The present is becoming a very era of cement construction, and the manufacture of cement and cement blocks is an important industry. The mechanical equipment for manufacturing cement blocks and other similar products from cement has attracted the attention of some of the most expert engineers. In perfecting the machinery they have expended much time and energy, but with the result of arriving at a complete and

final solving of the problem. Cement blocks for erecting building structures of all kinds are at present in steady demand, and the consumption increases daily at a rapid rate as engineers, architects and contractors become more fully acquainted with their merits. Being strong, fire-resisting, durable and ornamental where necessary, cement blocks are continually demonstrating their value as a modern building material. The Cement Machinery Co. of Jackson, Mich., is being especially successful in introducing its cement-making machine. This company manufactures cement-concrete construction-block machinery and devices under the Normandin patents. It is now presenting illustrative and descriptive literature regarding the equipments it offers, and which have been installed in a number of plants in different parts of the country.

Standard Electric Co., Norfolk.

Electrical installation for lighting and power plants, for manufactories and various other avenues of activity in which electricity is utilized, require for their completion not only efficient machinery, but also competent contractors. Ability to do this kind of work satisfactorily, even for the most exacting, is the reputation earned by the Standard Electric Co. of Norfolk, Va. This company has obtained some of the most important Southern contracts. It is now installing the arc and incandescent equipment for the Merrimac mill and village at Huntsville, Ala., and is about to begin installations for Dan River Power & Manufacturing Co., Danville, Va. This latter is one of the largest contracts, possibly the largest contract, of its kind ever awarded in the South. It includes a water-power plant of 4000 horsepower, Westinghouse apparatus to be used. The work is being done for the Westinghouse Company, Lockwood, Greene & Co. of Boston being engineers and architects. The Standard Electric Co. has closed its Atlanta office and transferred James Harrison, formerly Atlanta manager, to Charlotte, N. C., vice G. H. Rutledge. Atlanta territory contracts and forces have been consolidated with Charlotte to enable better handling of work. S. B. Swift, who has had an extensive experience in electrical matters, has been promoted to be manager of the Standard Electric Co., with headquarters at Norfolk, vice former manager Alan M. Cohen. H. S. Kemp, who has had a large and varied experience in construction work, and who has been with the company from about its beginning, is superintendent of construction, located at Norfolk, Va. E. E. Vickers, district superintendent of construction, is located at Charlotte. J. M. Williams, secretary and treasurer, and founder of the company and executive officer, is also located at Norfolk. The president is James G. Penn; vice-president, R. L. Dibrell, and second vice-president, O. W. Dudley, all well-known capitalists and tobacco brokers of Danville.

TRADE LITERATURE.

Clark & Hines Calendar.

Those who use mine, mill and contractors' supplies should supply themselves with the Clark & Hines monthly calendar. This little publication serves as a most handy reference for the sizes of railroad spikes, rails, crossties, splice joints, etc. It is issued by Messrs. Clark & Hines, manufacturers' agents, 600 Equitable Building, Baltimore. They deal in the products above referred to, also in iron and steel of all kinds, wire rope, machinists' supplies, cars of all kinds, electrical supplies, etc.

New Link-Belt Catalogue.

The Link-Belt Engineering Co. of Nicetown, Philadelphia, Pa., is issuing a new catalogue in reference to its shallow trough belt conveyors and its coal and coke crushers. The two classes of equipment are shown in general views of complete plant installed and also in detail, so that the mechanical points can be readily appreciated. This company offers users a great variety of conveyors and elevators for handling of material, in designing and building which it has been very successful during the past twenty years.

Interesting Pump Facts.

The Brooklyn Engineers' Club held the first meeting of the season October 8. Besides the usual formal business, a very interesting paper, entitled "A History of Pumps, Ancient and Modern," was read by John A. Drew of the Worthington company. Mr. Drew sketched the development of pumping machines from the early Egyptian "Noria," resembling the familiar well sweep, to the latest triple-expansion condensing water-works pumping engines, requiring little more than a pound of coal per horsepower hour. The reading of the paper was

INDUSTRIAL NEWS OF INTEREST.

New Railroad Device.

It will probably interest railway managers and makers of railway track material to know that there has been invented a device for fastening the ends of the bars of a railroad track together without bolts. This device has been originated by a client of John A. Neese of Carnesville, Ga.

Filter-Sand Business.

Those who may be seeking an opening to engage in business in the South are advised that an established plant is offered for sale. This property includes buildings and machinery for a filter-sand business, and full particulars can be obtained by addressing P. O. Box 180, Portsmouth, Va.

Angle Bar and Nut Lock.

Those who are concerned in railway construction and operation will be interested to know that a new angle bar and nut lock is about to be introduced. This new device is being patented by Wm. A. Young of Steele, Mo. He desires to sell the patent, and invites correspondence so that full details regarding his device can be given.

Diamond Co. at Pittsburg.

In order to provide better facilities for selling and distributing its product, the Diamond Drill & Machine Co. of Birdsboro, Pa., has established an office in Pittsburg. This branch is located in the Farmers' Bank Building, in charge of G. B. Nutt, the Pittsburg representative of Messrs. Pilling & Crane, the latter being the Diamond Company's Pittsburg agents.

Personal.

F. D. Weeks, who has charge of the smelting department of the Engineering Company of America, has gone to Copper Cliff, Ontario. He was accompanied by Edward Everett, who goes as his assistant. The Engineering Company (New York offices at 74 Broadway) has charge of the design, plans and specifications of the new smelter which the Canadian Copper Co. is erecting at Copper Cliff.

Has a Boston Branch.

Users of woodworking machinery in New England will be pleased to hear that the H. B. Smith Machine Co. of Smithville, N. J., has opened a branch office to pay particular attention to the trade of that section. The office is located in Boston, temporarily at No. 12 Pearl street, in charge of Elroy N. Heath, who has had an experience of some thirty years in the manufacture and sale of woodworking machinery.

Fertiliser Plant for Sale.

Mining the phosphate deposits of Florida and manufacturing fertilizers therefrom is an important industry. At Jacksonville there is an established fertiliser plant which circumstances have placed on the market. This property is stated to be in first-class condition, and of such a character that it can be developed as a paying enterprise. W. W. Gordon, Jr., Merchants' Bank Building, Savannah, Ga., can give particulars regarding price and terms of sale.

Modern Ammunition.

Recent tournaments in Pennsylvania have demonstrated the shooting qualities of

Peters' shotgun ammunition in the hands of amateurs. At Ligonier, Pa., L. B. Fleming won high amateur average with 96 per cent., and Fred Coleman of Hegins, Pa., won the amateur averages at Milton, Scranton (Interstate tournament), and at the three days' shoot of the Florist Gun Club, Philadelphia, Pa. Peters Cartridge Co., New York office at 80 Chambers street, manufactures Peters' ammunition.

Brick and Pipe Plant Location.

As the consumption of paving bricks, hollow building blocks, conduit pipes, sewer piping and other similar product increases there is a larger demand created for such supplies. Street and sewer improvements in small and large cities and general building work are now utilizing an extensive output of the class of materials mentioned. In the South there are desirable locations for plants to supply the Eastern and Southern trade. A location now available to those who think of building brick and pipe plants has the advantages of ample supply of clay shale at low prices, three railroads to principal markets, low freight rates and plenty of cheap labor. Those who are interested in this location offer special inducements to parties who will build a plant. A full investigation is asked. Address Hagl, care Manufacturers' Record.

A. H. Barber Co.'s Successor.

A trade announcement that should be noted concerns the A. H. Barber Manufacturing Co. of Chicago. This company established a high reputation for its refrigerating machines, creamery and dairy supplies. On account of the death of Mr. Barber the company is retiring from business, and the Creamery Package Manufacturing Co., 149-155 E. Superior street, Chicago, has taken over the entire plant. The Creamery Package Manufacturing Co. is well known in supplying dairy apparatus, De Laval cream separators, Disbrow churns and other machines. It is enlarging and improving the old Barber plant, and will continue to manufacture the Barber style of equipment, as well as its own type of machines. The refrigerating machine department will be in charge of Victor H. Becker, with offices at 1142-1153 W. Sixteenth street, Chicago.

To Prevent Fires.

The Louisiana Purchase Exposition is taking every precaution to prevent the recurrence at St. Louis of any such disastrous fire as that which destroyed the great cold-storage building at the Chicago Exposition. Adequate provision is being made for water supply by putting in what is claimed will be the largest installation of fire pumps in the world. These pumps have been purchased from Henry R. Worthington, New York. They comprise twelve 1000-gallon standard Underwriter fire pumps, each capable of supplying four fire streams, making it possible to have forty-eight fire streams in use at one time. The pumps are of the duplex double-acting type, and are supplied with air and vacuum chambers of large capacity. The fittings are of composition metal throughout, and the piston and valve rods are of bronze. Every measure has been taken in designing these pumps to insure that they will start at a moment's notice at any time after having been idle for a long period. They are

Illustrated by a large number of lantern slides.

Wire Rope and Cordage.

It is practically impossible to specify all the uses to which wire rope is adapted. Such rope is installed not only for haulage plants of all kinds, guy ropes, ships' rigging, wire tramways, cable railways and other standard equipments in use every day, but also to perform various other duties in and around factories, mills and other industrial plants and scenes of activity. The Broderick & Bascom Rope Co. of St. Louis is one of the leading manufacturers of wire rope and cordage of every description. Established in 1875 and incorporated in 1882, this enterprise has grown rapidly, until today it is one of the largest and best known of its kind in the United States. These facts are called forth by a glance at the company's price-list "E," dated July, 1903, superseding all others. If you use or think of using wire rope of any kind do not fail to send for this list. Company's offices are at 305 N. Main street. It also has branches at Seattle and New York.

The Nernst Lamp.

Artificial illumination is one of the necessities of life, and methods of producing it are older than history. In modern times electricity has been introduced, and the arc and incandescent lamp now plays an important part in our manner of living. The Nernst Lamp, which has been so successful since its introduction several years ago, is the subject of an interesting publication about to be issued. This publication is a textbook of the highest character, and will prove of value and interest not only to the electrical profession, but also to students of electrical science. The treatise is by A. J. Wurts, electrical engineer, who has developed the Nernst Lamp to its present practical efficiency. It is not expected that the Nernst Lamp will supplant other illuminants to any marked degree, but that it will create for itself a field of its own. Owing to its brilliancy and economy, it will excite a demand for more light, increasing rather than decreasing the use of other illuminants. The Nernst Lamp Co. (one of the Westinghouse companies), Pittsburg, Pa., is the manufacturer of the lamp named.

Checks to Dampness.

Checks to dampness are in constant demand among owners of buildings, bridges and other metal structures. Damp-resisting materials in the form of paints have proven very successful, and American manufacturers have met the demand with their accustomed thoroughness. Users of and dealers in damp-resisting paints will find interesting and valuable facts for their consideration in a brochure entitled "Endorsements on Our Check to Dampness." This publication is issued by the R. I. W. Damp Resisting Paint Co. of 472 W. Broadway, New York. It tells about the waterproof and protective qualities of the paints and coatings for different purposes manufactured by the R. I. W. company. Many prominent architects and contractors are among those who endorse the R. I. W. checks to dampness. The brochure mentioned gives all the necessary data that is required to enable the reader to understand the superior qualities of R. I. W. specialties. Messrs. Toch Bros. (established in 1848) conduct the company named. They are well known as manufacturers, importers and specialists in technical paints, colors, chemicals, raw materials, etc.

Mill Furnishings.

Mills for grinding and crushing corn, wheat and the various other grains are in increasing demand in all sections of the United States. Plants requiring the kind of machinery referred to are being erected and established plants are being enlarged to meet the increase in consumption of the food products which those mills manufacture. Portable mills and mill machinery made by the Munson Bros. Co. of Utica, N. Y., constitute a large part of the equipments installed. This company has for many years made a specialty of such mills, its various types having become well known wherever mills and mill furnishings are used. The company's specialties include Munson's portable mills and mill stones, Robinson mills, Little Giant water-wheels, Munson's patent eyes and spindles, shafting, gearing, pulleys and all kinds of mill furnishings. Equipments for mills of small size or of the largest size are furnished or complete plants are designed and erected ready for operation. The Munson machinery is noted for its efficiency, durability, simplicity, scientific principles and other features that appeal to millers. The Munson catalogue is now ready for distribution to inquirers. Its contents include illustrations and descriptions of the various types of machines supplied to users.

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office Manufacturers' Record,
Baltimore, Md., October 14.

The Baltimore stock market during the past week was without particular movement, there being no wide variation in prices. United Railways and Seaboard, which were the most active issues, continued depressed, the common stock of the former making a new low record; Consolidated Gas also declined, and Cotton Duck and G. B. S. Brewing issues were dull. The investment list displayed a general lack of interest.

In the trading United Railways common dropped from 9½ to 9; the income bonds from 58½ to 58¼; the 4s from 90½ to 90. Consolidated Gas went from 62½ to 60, and the 5s sold at 100½ and 110. Seaboard common declined from 12¼ to 11½, rose to 12½, and then dropped again to 11¼, finally reacting to 12; the preferred dropped from 21½ to 20, and while temporarily experiencing a partial reaction, fell again to the lowest point, reacting ½; the 4 per cents dropped from 68½ to 67½, reacted to 68, and then fell to 65½; the 5s sold at 101 and 101½. Cotton Duck common changed hands at 1½ to 1½; G. B. S. Brewing common at 8; the incomes at 31 to 30; the income scrip at 30; the 1sts at 46½ to 46½, and the scrip at 47½. Bank of Baltimore sold at 111½ and 112, and Citizens' Bank at 28; Maryland Casualty at 45.

Other securities traded in were as follows: Baltimore City 5s, 1916, 119½ and 122½; do. 3½s, 1928, 110; Northern Central stock, 85 to 88; Lexington Street Railway stock, 40½; Atlantic Coast Line 1st consolidated 4s, 91½ to 90½; Georgia, Carolina & Northern 5s, 106½ and 106¼; Wilmington & Weldon 5s, 116; Georgia Southern & Florida 5s, 108; Anacostia & Potomac 5s, 91½; Charleston City Railway 5s, 104½; Virginia Centuries, 92; Baltimore & Ohio stock, 72½; Lexington Street Railway 5s, 100; Atlantic Coast Line new 4s, certificates, 80; Virginia Midland 2ds, 107½; do. 5ths, 105½; Atlanta Street Railway 5s, 103.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended
October 14, 1903.

| Railroad Stocks. | Par. | Bid. | Asked. |
|-------------------------------|------|------|--------|
| Georgia Sou. & Fla. 1st Pref. | 100 | 90 | 96 |
| Georgia Sou. & Fla. 2d Pref. | 100 | 60 | 70 |
| United Railways & Elec. Co. | 50 | 8½ | 9 |
| Seaboard Railway Common | 100 | 11¼ | 12½ |
| Seaboard Railway Preferred | 100 | 20 | 20½ |
| Atlantic Coast Line of Conn. | 100 | ... | 250 |

| Bank Stocks. | Par. | Bid. | Asked. |
|------------------------------|------|------|--------|
| Citizens' National Bank | 10 | 27 | 30 |
| Commercial & Far. Nat. Bank | 100 | 108 | 115 |
| German Bank | 100 | 108 | ... |
| Manufacturers' National Bank | 100 | 98 | ... |
| Merchants' National Bank | 100 | 107 | 115 |
| National Bank of Baltimore | 100 | 100 | 115 |
| National Exchange Bank | 100 | 190 | 195 |
| National Howard Bank | 10 | 11½ | ... |
| National Marine Bank | 30 | 35 | 37½ |
| National Mechanics' Bank | 10 | 29 | 30½ |
| Second National Bank | 100 | 190 | ... |
| Third National Bank | 100 | 105 | 120 |

| Trust, Fidelity and Casualty Stocks. | Par. | Bid. | Asked. |
|--------------------------------------|------|------|--------|
| American Bonding & Trust | 50 | ... | 86 |
| Continental Trust | 100 | ... | 155 |
| Fidelity & Deposit | 50 | ... | 150 |
| International Trust | 100 | ... | 110 |
| Maryland Casualty | 25 | 46½ | 50 |
| Maryland Trust | 100 | 100 | 155 |
| Mercantile Trust & Deposit | 50 | 135 | 155 |
| Union Trust | 50 | ... | 62 |

| Miscellaneous Stocks. | Par. | Bid. | Asked. |
|----------------------------|------|------|--------|
| G. B. & S. Brewing Co. | 100 | 14 | ... |
| United Elec. L. & P. Pref. | 50 | ... | 40 |
| Cotton Duck Voting Trust | 100 | 1 | 1½ |
| Consolidation Coal | 100 | 70 | 77½ |
| George's Creek Coal | 100 | ... | 87 |
| Consolidated Gas | 100 | 69½ | 60½ |

| Railroad Bonds. | Par. | Bid. | Asked. |
|-------------------------------------|------|------|--------|
| Albany & Northern 5s | 94 | 95½ | ... |
| Atlanta & Charlotte 1st 7s, 1907 | 107 | ... | 107 |
| Atlantic Coast Line 1st 4s | 100 | 90½ | 90½ |
| Char. Col. & Aug. 2d 7s, 1910 | 100 | 110 | ... |
| Columbia & Greenville 1st 6s, 1916 | 110 | ... | 110 |
| Georgia, Car. & North, 1st 5s, 1929 | 106 | 107 | ... |
| Georgia South. & Fla. 1st 5s, 1945 | 106 | 109 | ... |

| | | |
|------------------------------------|------|------|
| Georgia Pacific 1st 6s, 1922 | 118 | ... |
| Petersburg, Class A 5s, 1926 | 105 | ... |
| Petersburg, Class B 6s, 1926 | 120 | ... |
| Raleigh & Augusta 1st 6s, 1926 | 120 | ... |
| Richmond & Danville Gold 6s, 1915 | 112 | 114 |
| Savannah, Fla. & West 5s, 1904 | 106 | ... |
| Seaboard & Roanoke 5s, 1925 | 112½ | ... |
| Southern Railway Con. 5s, 1904 | 111½ | ... |
| Virginia Midland 5th 5s, 1926 | 110 | ... |
| West. North Carolina Con. 6s, 1914 | 112 | 117 |
| West Virginia Central 1st 6s, 1911 | 108 | 110 |
| Wilmington, Col. & Aug. 6s, 1910 | 108 | ... |
| Wilmington & Wel. Gold 5s, 1935 | 115 | 116 |
| Buffalo City Railway 5s, 1922 | 104½ | 106 |
| Newport News & Old Pt. 6s, 1938 | 105 | ... |
| Norfolk Street Railway 5s, 1944 | 100 | 108 |
| United Railways 1st 4s, 1919 | 90 | 90½ |
| United Railways Inc. 4s, 1919 | 58½ | 58½ |
| Seaboard 4s | 65 | ... |
| Seaboard 10-year 5s | 100½ | ... |
| Georgia & Alabama Con. 5s | 103½ | ... |
| South Bound 5s | 100 | 105½ |

| Miscellaneous Bonds. | Par. | Bid. | Asked. |
|--------------------------------|------|------|--------|
| G. B. & S. Brewing 1st 3-4s | 46¼ | 46¼ | ... |
| G. B. & S. Brewing 2d Income | 30¼ | 30¼ | ... |
| United Elec. Light & Power 4½s | 85 | ... | ... |
| Atlanta Gaslight 1st 5s, 1917 | 105 | 110 | ... |
| Consolidated 6s, 1910 | 105 | 110 | ... |
| Consolidated Gas 5s, 1939 | 110 | ... | ... |

SOUTHERN COTTON MILL STOCKS

Quotations Furnished by Hugh Mac-
Rae & Co., Wilmington, N. C., for
Week Ending October 13.

| | Bid. | Asked. |
|------------------------------------|------|--------|
| Abbeville Cotton Mills (S. C.) | 70 | 70 |
| Alken Mfg. Co. (S. C.) | 90 | ... |
| Anderson Cotton Mills (S. C.) | 130 | ... |
| Arkwright Mills (S. C.) | 105 | ... |
| Augusta Factory (Ga.) | 64 | ... |
| Avondale Mills (Ala.) | 90 | 95 |
| Belton Mills (S. C.) | 102 | 108½ |
| Bibb Mfg. Co. (Ga.) | 101 | 105 |
| Brandon Mills (S. C.) | 101 | 105 |
| Huntley Cotton Mills (S. C.) | 101 | 105 |
| Chabarrus Cotton Mills (N. C.) | 122 | ... |
| Chiquola Mfg. Co. (S. C.) | 95 | ... |
| Clifton Mfg. Co. (S. C.) | 102 | ... |
| Clinton Cotton Mills (S. C.) | 132½ | ... |
| Courtenay Mfg. Co. (S. C.) | 125 | ... |
| Columbus Mfg. Co. (Ga.) | 95 | ... |
| Dallas Mfg. Co. (Ala.) | 90 | ... |
| Darlington Mfg. Co. (S. C.) | 95 | ... |
| Engle & Phenix Mills (Ga.) | 100 | ... |
| Enslay Cotton Mills (S. C.) | 99 | 102 |
| Enterprise Mfg. Co. (S. C.) | 80 | ... |
| Exposition Cotton Mills (Ga.) | 150 | ... |
| Gaffney Mfg. Co. (S. C.) | 97 | ... |
| Granby Cot. Mills (S. C.) 1st Pfd. | 98½ | ... |
| Granville Mfg. Co. (S. C.) | 160 | ... |
| Greenwood Cotton Mills (S. C.) | 99 | 102 |
| Grendel Mills (S. C.) | 105 | ... |
| Honietta Mills (N. C.) | 105 | ... |
| King John P. Mfg. Co. (S. C.) | 88 | ... |
| Lancaster Cotton Mills (S. C.) | 100 | 110 |
| Lancaster Cot. Mills (S. C.) Pfd. | 100 | ... |
| Langley Mfg. Co. (S. C.) | 90 | ... |
| Laurens Cotton Mills (S. C.) | 105 | ... |
| Lockhart Mills (S. C.) | 100 | ... |
| Louise Mills (N. C.) | 95 | ... |
| Louise Mills (N. C.) Pfd. | 102 | 110 |
| Mariboro Cotton Mills (S. C.) | 95 | ... |
| Manchester Cotton Mills (S. C.) | 90 | ... |
| Mills Mfg. Co. (S. C.) | 100 | ... |
| Mills Mfg. Co. (S. C.) Pfd. | 100 | ... |
| Monaghan Mills (S. C.) | 100 | 103 |
| Newberry Cotton Mills (S. C.) | 120 | ... |
| Norris Cotton Mills (S. C.) | 100½ | ... |
| Olympia Cotton Mills (S. C.) Pfd. | 90 | ... |
| Odell Mfg. Co. (N. C.) | 98 | 102 |
| Orangeburg Mfg. Co. (S. C.) Pfd. | 100 | 102 |
| Ort Cotton Mills (S. C.) | 102 | ... |
| Pacolet Mfg. Co. (S. C.) | 108 | ... |
| Pelzer Mfg. Co. (S. C.) | 165 | 175 |
| Richland Cotton Mills (S. C.) Pfd. | 93½ | ... |
| Roanoke Mills (N. C.) | 90 | ... |
| Saxon Mills (S. C.) | 100 | 103 |
| Sibley Mfg. Co. (Ga.) | 60 | 65 |
| Southern Cotton Mills (N. C.) | 95 | ... |
| Spartan Mills (S. C.) | 135 | 140 |
| Trian Mfg. Co. (Ga.) | 125 | 150 |
| Tuscan Mills (S. C.) | 140 | ... |
| Union Cotton Mills (S. C.) Pfd. | 103½ | ... |
| Victor Mfg. Co. (S. C.) | 129 | 133 |
| Warren Mfg. Co. (S. C.) | 100 | 101½ |
| Warren Mfg. Co. (S. C.) Pfd. | 106 | ... |
| Washington Mills (Va.) | 15 | ... |
| Washington Mills (Va.) Pfd. | 100 | ... |
| Whitney Mfg. Co. (S. C.) | 115 | 125 |
| Wilmington Cot. Mills (N. C.) Pfd. | 100 | ... |
| Wiscness Mills (N. C.) | 113 | ... |
| Woodruff Cotton Mills (S. C.) | 95 | 97½ |

A Valuable Financial Book.

The Investment Directory, Insurance Companies, compiled by S. H. Wolfe, consulting actuary, New York, and published by the Insurance Press, also of that city, is a volume which must prove of interest and value to investors generally. It presents a very thorough and complete description and classification of securities to the par value of about one and one-fourth billion dollars held on January 1, 1903, by insurance companies transacting business in the United States. The first half of the book is devoted to the different stocks and bonds, showing the amounts of their distribution with each of the various insurance companies, and the other half contains a classification of the companies with the security schedule of each. A complete index is also provided for making readily available the large fund of information in the book, although the contents are alphabetically arranged. The list of securities includes United States government bonds, State and municipal bonds, bank and trust-company stocks, railroad stocks

TABLE OF CONTENTS.

| EDITORIAL: | Page. |
|--|-------|
| Texas-Louisiana Oil | 239 |
| Merely a Vaunt | 239 |
| Secretary Wilson to Study Cotton | 239 |
| Interurban Railways in the South | 240 |
| Greensboro Not Slighted | 240 |
| To Upbuild the South | 240 |
| Southern Workers Warned | 240 |
| Baltimore's Financial Growth | 241 |
| A Reward of Public Spirit | 241 |
| Blocking Their Own Game | 241 |
| The South's Industrial Growth | 241 |
| Another Water-Power Development | 241 |
| Fine Tobacco for Texas | 241 |
| For Clean Streets | 241 |
| Mussel Shells for Buttons | 242 |
| Water-Power Available | 242 |
| Tin from Texas | 242 |
| Alloys and Hack Saws | 242 |
| Openings in Scandinavia | 242 |
| Substantial Features of Texas Oil Production | 242 |
| Mining in the South | 243 |
| RAILROADS: | |
| Houston to Sour Lake | 243 |
| Eureka Springs to Huntsville | 243 |
| Wabash Eastern Line | 244 |
| After the Ashland Belt Line | 244 |
| The "Frisco" Progress | 244 |
| "Cotton Belt" Report | 244 |
| Atlanta to Marietta | 244 |
| A Valuable Book | 244 |
| Royal Blue Book | 244 |
| A Georgia Line to Extend | 244 |
| May Soon Build | 244 |
| Railroad Notes | 244 |
| American Coal for Europe | 245 |
| Vehicles for South Africa | 245 |
| TEXTILES: | |
| Texas' Textile School | 245 |
| The Capitoia Mill | 245 |
| Combed Sea Island Yarns | 245 |
| The Cotton Movement | 245 |
| Textile Notes | 245 |
| Quotations of Cotton Yarns | 245 |
| Break in Southern Iron Association | 245 |
| Blast-Furnace Statistics | 245 |
| MECHANICAL: | |
| Carborundum Products (Illus.) | 246 |
| A Large Refrigerating Machine (Illus.) | 246 |
| Jeffrey Barrel-Handling Machinery (Ill.) | 246 |
| Gibbs Portable Shingle Machine (Ill.) | 247 |
| A Record in Coal Hoisting (Illus.) | 247 |
| Improved Double Circular Saw (Illus.) | 247 |
| Cannery for Huntsville | 247 |
| CONSTRUCTION DEPARTMENT: | |
| New Enterprises | 248 |
| Building Notes | 251 |
| Railroad Construction | 251 |
| Machinery Wanted | 252 |
| Industrial News of Interest | 253 |
| Trade Literature | 253 |
| FINANCIAL NEWS: | |
| Review of the Baltimore Market | 254 |
| Securities at Baltimore | 254 |
| Southern Cotton-Mill Stocks | 254 |
| A Valuable Financial Book | 254 |
| South Carolina Bankers | 254 |
| New Corporations | 254 |
| New Securities | 31 |
| Financial Notes | 31 |

and bonds and miscellaneous stocks and bonds. As a basis for the work the official insurance reports of the different States were used wherever practicable, and when such reports did not present definite descriptions of securities, application was made direct to the companies for such data. It is a book which will be valuable to bankers and brokers, as well as to other business men who have to deal with stocks and bonds. It is to be issued every year, and changes and additions are to be made accordingly.

South Carolina Bankers.

The South Carolina Bankers' Association, which held its annual convention at Columbia, elected officers for the year as follows: President, E. Robertson of Columbia; vice-president, B. T. Mauldin of Anderson; secretary and treasurer, Joseph Norwood of Greenville. Among the speakers at the convention were Governor D. C. Heyward, A. C. Haskell, vice-president of the National Loan and Exchange Bank of Columbia; Mayor F. Sumter Earle, President E. H. Pringle of the Bankers' Association, W. D. Morgan of Georgetown and others. The convention lasted two days, and concluded with a banquet.

New Corporations.

The First National Bank of Yorktown, Texas, capital \$25,000, has been authorized to begin business; William Eckhardt, president; Charles J. Eckhardt, cashier.

[For Additional Financial News, See Pages 30 and 31.]

Hambleton & Co.**BANKERS and BROKERS,**

Members New York and Baltimore Stock Exchanges.

17 S. Calvert St., BALTIMORE.

High-grade Investment Bonds, Municipal, Railway, Industrial.

Letters of Credit Available Everywhere.

CONDENSED STATEMENT OF THE First National Bank of Richmond, Va.

Sept. 9, 1908.

RESOURCES.

| | |
|---|-----------------------|
| Loans and Discounts | \$4,977,890 94 |
| Overdrafts | 142 84 |
| Other Stocks and Bonds | 17,001 78 |
| Banking House and other Real Estate | 67,510 14 |
| Furniture and Fixtures | 0 00 |
| U. S. 2 Per Cent. Bonds at par (Market Value \$467,825 00.) | 612,500 00 |
| Premium on U. S. Bonds | 0 00 |
| Virginia Bonds to Secure U. S. Deposits | 306,000 00 |
| Cash and Due from Banks | 1,408,812 35 |
| LIABILITIES. | \$6,380,457 75 |

| | |
|--------------------------|-----------------------|
| Capital | \$600,000 00 |
| Surplus and Profits, net | 515,742 23 |
| Reserved for Interest | 9,096 01 |
| Circulation | 299,000 00 |
| Deposits | 4,447,319 51 |
| U. S. Bond Account | 12,500 00 |
| Virginia Bond Account | 396,400 00 |
| | \$6,380,457 75 |

VIRGINIUS NEWTON, Pres. JNO. M. MILLER, JR., Cash.

C. N. McADOO & CO.

GREENSBORO, N. C.

Investment Securities.

Stocks and Bonds bought and sold.

Legitimate enterprises incorporated and financed.

Loans negotiated

HENRY W. THOMSON,

Spartanburg, S. C.

STOCK AND BOND BROKER,

Southern Cotton-Mill Stocks a Specialty.

CORRESPONDENCE SOLICITED.

Members Baltimore Stock Exchange.

J. WM. MIDDENDORF & CO.**BANKERS AND BROKERS,**

Continental Trust Bldg.

Baltimore, Md.

Stocks and Bonds Bought and Sold on Commission. Special attention given to Municipal and other Investment Loans. Dealers in Foreign Exchange. Drafts on Europe and Letters of Credit furnished. Private Wire to New York and Richmond.

Merchants' & Farmers' Nat. Bank

CHARLOTTE, N. C.

Capital, \$200,000. Surplus and Profits, \$75,000.

Prompt and intelligent attention to all business entrusted to us. Correspondence invited.

Dr. J. H. McAden, Pres. Geo. E. Wilson, V. Pres. C. N. Evans, Cash. W. C. Wilkinson, Asst. Cash. N. Y. Correspondent: SEABOARD NATIONAL BANK.

Spencer Trask & Co.**BANKERS**William & Pine Sts., New York
Investment Securities.

Members New York Stock Exchange.

Branch Office, Albany, N. Y.

Savannah Trust Company,

13 Bay St., East, SAVANNAH, GA.

Capital, \$500,000.

Executes trusts of every description. Accepts deposits and allows interest on daily balances. Collections promptly handled.

WM. W. MACKALL, President. GEO. J. BALDWIN, Vice-President. WM. V. DAVIS, Secretary and Treasurer.

JOHN L. WILLIAMS & SONS,**BANKERS,**

Dealers in RICHMOND, VA.

Southern Investment Securities

MUNICIPAL BONDS A SPECIALTY.

Correspondence Invited.

J. P. HORNADAY & CO.

Electric Railway, Water Works, Light, Traction, Industrial and Mineral Properties and Securities Bought and Sold.

Suite No. 1108 Traction Bldg. CINCINNATI

Maryland Trust Company,

BALTIMORE.

CAPITAL, - \$2,125,000.00

SURPLUS, - \$2,437,500.00

Transacts a General Trust Company Business.

Interest Allowed on Deposits.

Legal Depository for Court and Trust Funds.

Safe Deposit Boxes for Rent.

Acts as Financial Agent for Municipal and other Corporations.

Hugh MacRae & Co.**Bankers,**

MISCELLANEOUS SOUTHERN SECURITIES,

COTTON MILL STOCKS

WILMINGTON, N. C.

WASHINGTON, D. C.

(Kellogg Building.)

International Trust Co.

Of Maryland,

BALTIMORE.

Capital, - \$2,000,000.00
Surplus and Profits, \$1,550,660.12**OFFICERS:**DOUGLAS H. GORDON, President.
J. WM. MIDDENDORF, Vice-Pres.
EDWARD H. THOMSON, Sec. and Treas.
CHAS. D. FENHAGEN, Sec. and Treas.
WALTER D. FOCKE, Asst. Sec. & Treas.**Executive Committee:**SAMUEL C. ROWLAND, Chairman,
Sec. and Treas. American Lumber Co.;
Pres. National Bank of Port Deposit, Md.
SUMMERFIELD BALDWIN, of
Woodward, Baldwin & Co., Wholesale
Dry Goods Commission Merchants;
Director National Exchange Bank.
RICHARD H. EDMONDS, President and
Editor Manufacturers' Record.
J. WM. MIDDENDORF, of J. Wm. Middendorff & Co., Bankers & Brokers;
Vice-Pres. Seaboard Air Line Railway.
EDWARD H. THOMSON, of E. H. Thomson & Sons, Bankers & Brokers;
Director Merchants National Bank.
DOUGLAS H. GORDON, President.

We respectfully solicit correspondence with Banking Institutions and Corporations desiring the services of a well equipped Trust Company.

4 % Certificates of Deposit.Due March 1, 1908.
Interest payable quarterly.**Coupon Certificates of \$1000 each.**

The above certificates are engraved, in coupon form, issued to bearer, with provision for registration of Principal, in denominations of \$1000 each, interest at four per cent. per annum, payable March, June, September and December. The holder of these certificates, by giving sixty days' notice in writing, can obtain payment of principal on any interest date.

ISSUED BY

The Continental Trust Co.

BALTIMORE.

Capital and Surplus, \$5,340,000.

Interest paid on deposits subject to check.

Largest Capital of Any Bank or Trust Company in the South Atlantic States.

RICHMOND TRUST

AND

SAFE DEPOSIT COMPANY.

N. W. Corner 10th and Main Streets.

RICHMOND, VA.

CAPITAL, \$1,000,000

Does a general Trust Company business. Acts in all Fiduciary capacities. Receives deposits and allows interest thereon.

President, - JOHN SKELTON WILLIAMS,
Vice-Presidents, - JAMES H. DOOLEY,
HENRY L. CARELL,
Treasurer, - LEWIS D. CRENSHAW, Jr.

CORRESPONDENCE INVITED.

*Americana*Do you wish any Manila, Sisal or Jute Rope?
Write THE AMERICAN MFG. CO., 65 Wall Street, N. Y.
They are the largest fibre workers in the world, making everything in the Cordage line from a small India Twine to an eighteen-inch towing Hawser. * * * * *

This rope drive is transmitting 80 H. P.; the belt 75 H. P.

"AMERICAN" TRANSMISSION ROPE

is not the cheapest to buy but it is the most economical to use. * * *

Power costs money. * * *

"A Little Blue Book on Rope Transmission" will show you how to save both. A copy will be sent for the asking, and it is worth asking for. * * *

Ropehead

It is reported that a bank is being organized at Morven, N. C., with \$12,000 to \$15,000 capital.

The Pikeville Building Association & Loan Co. has been organized at Pikeville, Ky.; capital \$75,000.

The Bank of Arcadia has been authorized to begin business at Arcadia, Oklahoma; capital \$5000.

The People's Savings Bank of Brownsville, Tenn., has organized by electing John Y. Barbee as president and J. W. Byrn as cashier.

The First National Bank of Calvin, I. T., has been authorized to begin business; capital \$25,000; George A. Scales, president; Fred C. Russel, cashier.

The Pearsall National Bank of Pearsall, Texas, has been authorized to begin business; capital \$50,000; C. H. Beever, president; J. M. Riggan, cashier.

The Virginia Trust and Saving Corporation of Alexandria, Va., capital from \$10,000 to \$100,000, has been incorporated; president, L. G. Smith of Philadelphia.

The Georgia Insurance & Brokerage Co. of Atlanta, Ga., capital \$100,000, has applied for a charter. The organizers are A. S. Doughty, Ed C. Bruce and J. B. Felder.

The First National Bank of Prague, O. T., has been approved; capital \$25,000. The organizers are George R. Sutton, H. Josey, J. H. Ayers, E. L. Conklin and P. S. Hoffman.

The Elk Banking Co. of Charleston, W. Va., capital \$40,000, has been incorporated by D. C. Boyce, H. B. Smith, Walter D. Stockley, A. J. Humphreys and G. W. Fulmar.

The Hancock County Bank of Sneedville, Tenn., capital \$25,000, has been chartered by M. T. Festerman, William B. Davis, T. J. Harrison, D. A. Greene and W. H. Tyler.

The Reliance Building and Loan Association of Charleston, S. C., capital \$150,000, has received its commission. The directors are M. F. Kennedy, R. E. Martin and F. M. Anderson.

The Elk Banking Co. of Charleston, W. Va., capital \$40,000, has been incorporated by D. C. Boyce, H. B. Smith, Walter D. Stockley, A. J. Humphreys and G. W. Fulmar of Charleston.

The First National Bank of Smithville, Texas, capital \$25,000, has been approved. The organizers are W. R. Searcy, Roger Byrne, J. P. H. Chancellor, D. Payne and A. B. Mayfield.

The Commercial National Bank of Burket, Texas, capital \$25,000, has organized by electing Otto S. Houston, president; F. P. Green and Early Moses, vice-presidents, and C. W. Howard, cashier.

The Melton's Bank of Gasaway, Cannon county, Tennessee, capital \$12,000, has been incorporated by G. G. Melton, J. B. Melton, J. H. Melton, J. W. Sadler, A. J. Smith and J. B. Smithson.

The Bank of Jonesboro at Jonesboro, Ga., has received its charter; capital \$25,000. The incorporators are A. O. Blacklock, L. H. Hammatt, Jesse W. Mundy and A. A. Camp, all of Jones county.

The First National Bank of Floydada, Texas, capital \$30,000, is approved. Those interested are L. T. Lester, Canyon, Texas; James B. Posey, Will W. Nelson, C. Surginer, John N. Farris.

The Citizens' National Bank of Calvin, I. T., has been approved; capital \$25,000. The organizers are M. B. Donogh of Allen, I. T.; M. P. Donogh, C. C. Atwood, Lafayette Walker and W. L. Chapman.

The Bank of Dexter at Dublin, Ga., capital \$15,000, has elected directors as follows: Dr. James E. New, president; J. B. Lord, W. H. Lee, W. H. Mullis, W. A. Shank, R. C. Hogan and W. B. Taylor.

The Bank of Wilson at Wilson, La.,

capital \$10,000, has organized and will apply for a charter. The officers are E. S. Hastings, president; R. E. Thompson, vice-president; J. C. McGlather, cashier.

The Collins Building and Loan Association of Collins, Miss., has published its charter; capital \$50,000. The incorporators are Wm. Rutledge, J. F. Rutledge, W. C. Wood, W. E. Payne and McIntosh Bros.

The Texas National Bank of Dallas, Texas, capital \$250,000, has been approved. The organizers are J. W. Blake, Dallas, Texas; A. C. Wilson, S. G. Davis, D. E. Grove, A. P. Wozencraft and others.

The Hickory Banking & Trust Co. is reported being organized at Hickory, N. C., with \$35,000 capital and officers as follows: J. F. Abernathy, president; Geo. Hutton, vice-president, and W. C. Kinnon, cashier.

The Citizens' Savings Bank is reported in process of organization at Birmingham, Ala., by B. F. Roden, J. B. Cobbs, H. H. Mayberry and others; capital \$100,000. It is expected to begin business before November 1.

The Citizens' National Bank of Blooming Grove, Texas, has been approved; capital \$25,000. R. S. Loyd, Blooming Grove, Texas; James Garitty, M. G. Young, B. F. Hartzell and J. H. Watson are the organizers.

The First National Bank of Chester, W. Va., which is a conversion of the Industrial Bank of West Virginia, has been authorized to begin business; capital \$50,000. John A. Campbell is president, and Oscar O. Allison, cashier.

The Citizens' National Bank of Garland, Texas, has been authorized to begin business; capital \$50,000. The organizers are Ben O. Smith, Fort Worth, Texas; B. H. Martin, Francis P. Smith, T. N. Hickman and Alice P. Hickman.

The Texas Loan & Reserve Co. of Grand Prairie, Dallas county, Texas, capital \$100,000, has filed its charter. The incorporators are G. W. Owens, Oak Cliff; W. R. Edrington, H. C. Edrington and R. G. Johnson of Fort Worth.

The Commercial National Bank of Oklahoma City, O. T., has been authorized to begin business; capital \$100,000. The officers are: President, John Threadgill; vice-president, C. F. Colcord; cashier, John Hughes; assistant cashier, E. C. Trueblood.

A national bank is being organized at Northeast, Md.; capital \$25,000. The directors are L. L. Derickson, president; Charles A. Benjamin, vice-president; Andrew Anderson, E. T. B. Day, John Moore and Dr. R. G. Underwood; Robert L. Morgan, cashier; capital \$25,000.

The Volunteer State Life Insurance Co. has established temporary headquarters at Chattanooga, Tenn., and is preparing to begin business; capital \$200,000, surplus \$50,000. The officers are: President, Z. C. Patten; vice-president and general manager, E. B. Craig; superintendent of agencies, Theo. F. King; secretary, Albert Caldwell.

The Farmers' Mutual Insurance Association of Williamson county, Texas, with headquarters at Georgetown, has been incorporated by R. A. Bradford of Taylor, Frank L. Aten of Round Rock, J. H. Tom and S. M. Morris of Georgetown, J.

125,000 FOREIGN FUNDS

To allow owners of INDUSTRIALS, MANUFACTURING and like properties to develop. Correspondence may be made with ADVOCAT, Post Office Box 141, New York, U. S. A.

BUSINESS WRITER

M. E. GREENE, 209 DEARBORN STREET, CHICAGO. Will cheerfully furnish estimates

Booklets Prospectuses Circulars Follow-Up Systems

FISK & ROBINSON

BANKERS

Government Bonds

and other

Investment Securities

MEMBERS NEW YORK STOCK EXCHANGE

35 CEDAR STREET NEW YORK 28 STATE STREET BOSTON

American Cigar Co., Notes,
Continental Tobacco Deb. 7s,
Colts Arms Co. Stock,
Cuban 6s-1896 Issue,
Celluloid Co. Stock,
Retsof Salt Mining 5s,
Trenton Potteries, Common,
Standard Coupler, Common,
Syracuse Gas Co. 1st 5s,
Buffalo Gas Co. 1st 5s,

DEALT IN.

TOBEY & KIRK,

25 Broad St., New York.

Established 1873.

J. Wm. Middendorf, Pres. A. H. Rutherford, Treas.
B. L. Williams, Vice-Pres.
Howard P. Page, Sec. and Auditor.
E. L. Bemis, General Manager,
Office of Gen. Mgr., Richmond, Va.

Railways & Light Co. of America,

EXECUTIVE OFFICERS:

CONTINENTAL TRUST BUILDING,
BALTIMORE, MD.

Finances, Builds, Purchases Electric Railways,
Electric Lighting Properties, Waterworks, Ice
Plants, Etc. Examinations made and reports
furnished on all classes of industrial properties.
CORRESPONDENCE SOLICITED.

APPRAISAL & AUDIT CO. OF AMERICA.

Teutonic Bldg., CHICAGO.

Audits and Examinations of Books and Accounts. Devisers of Successful Accounting Systems. Appraisers of all classes of Property. Plans and Specifications of Buildings and Machinery. Send 10c. in stamps for book, "SYSTEM OF APPRAISAL & AUDIT."

WE FINANCE AND BUILD

Electric Railways, Power Stations, Water Powers, etc., etc.

WE BUY

Railway Charters and Franchises, ALSO Small Issues of Railway, Mining and Industrial Bonds.

Correspondence Solicited.

The Mechanics Electric Co.

P. O. Box 1157.

170 Summer St., BOSTON, MASS.

THE AUDIT COMPANY OF NEW YORK

EXAMINATIONS.

APPRAISALS.

AUDITS.

Investigations for Financing and Underwriting and for Reorganization Committees.

New York,

Mutual Life Buildings, 43 Cedar Street.

Chicago,

New York Life Building.

Philadelphia,

Arts Building.

WHEN ABOUT TO INCORPORATE

Write for fourth edition of "Pointers on Delaware Corporation." Official forms, estimates of cost and copies of the amended law.

DELAWARE TRUST COMPANY

WILMINGTON, DELAWARE.

The Exchange Bank, MACON, GA.

J. W. CABANISS, Pres. C. M. Orr, Cash.
W. H. BURDICK, Asst. Cash.

Capital, \$500,000.00
Surplus and Undivided Profits, 131,028.69

Best facilities for making Collections at lowest rates. Correspondence invited.

Jacob Phinizy, Pres. Chas. G. Goodrich, Cash.
Hamilton H. Hickman, Vice-Pres.

Georgia Railroad Bank, AUGUSTA, GA.

Capital, \$200,000.00 Undivided Profits, \$201,585.63
Commenced Business December 31, 1892.

SURETY BONDS.

Fidelity and Deposit Co.

OF MARYLAND.

Home Office, - BALTIMORE, MD.

Assets Over \$5,000,000.

Pioneer Surety Co. of the South. Becomes Surety on Bonds of every description.

AGENTS IN ALL PRINCIPAL CITIES.

HARRY NICODEMUS, Sec'y and Treas. EDWIN WARFIELD, President.

Guaranteed Storage Receipts Issued

For property stored on your own premises or in Public Warehouses. Also for Property stored in the warehouses of this Company.

All Receipts GUARANTEED by the FIDELITY & DEPOSIT CO. of Md.

A HIGH CLASS COLLATERAL--Accepted in all money markets.

Baltimore Fidelity Warehouse Co.

BALTIMORE, MARYLAND.

ALBERT G. OBER, President.
T. E. WITTERS, Sec'y & Mgr.
THOS. L. BERRY, Treasurer

AGENCIES:

Equitable Trust Company, Augusta, Ga.
American Trust & Banking Co., Atlanta, Ga.
Other agencies will be established where needed. Correspondence Solicited.

C. McBride of Leander, J. C. Lamb of Granger, D. D. Thompson of Florence and J. B. Salyer of Jonah.

The Bank of Newborn, Newton county, Georgia, has received its charter; capital \$25,000. The incorporators are C. A. Banks, N. P. Smith, J. M. Loyd, J. T. Pitts, R. A. Pitts, Guy Smith, J. T. Wilson, J. O. Stanton, Dr. J. L. Pharr, C. T. Williams, W. W. Childs of Newton county, W. P. Wallace, F. R. Porter, E. M. McCash of Morgan county and L. O. Benton of Jasper county.

New Securities.

Bay City, Texas.—The city has issued \$15,000 of 5 per cent. bonds for streets and bridges.

Austin, Texas.—The State board of education has purchased \$25,000 of Lavaca county bridge bonds.

Kaufman, Texas.—The city of Kaufman has issued \$5000 of 4½ per cent. supplementary water-works bonds.

Yorktown, Texas.—The city has issued 4 per cent. bonds as follows: \$25,000 for bridges and \$7500 for water-works.

Newport News, Va.—The finance committee of city council will recommend the issue of \$56,000 of 4½ per cent. paving bonds.

Beaumont, Texas.—The Jefferson county commissioners have authorized the sale of \$100,000 of 6 per cent. 20-40 road bonds.

Tullahoma, Tenn.—N. W. Harris & Co. of Chicago have purchased \$5000 of Tullahoma water-works bonds for par and interest.

Hartselle, Ala.—The Morgan county commissioners have ordered an election on November 16 to vote on \$100,000 of road bonds.

Burlington, N. C.—Alamance county has sold to C. A. Webb & Co. of Asheville, N. C., \$50,000 of 5 per cent. 30-year bonds at a premium of \$1350.

Whitecastle, La.—The town council has decided to sell \$10,000 of 5 per cent. 10-year water-works bonds, bids to be received until December 31.

Louisville, Ky.—The city has sold \$200,000 of the new bonds to the Germania Bank and the Fidelity Trust Co. at par. There are \$600,000 yet unsold.

Palestine, Texas.—The International & Great Northern Railroad has been granted permission to issue \$94,000 of bonds on the last four miles of the Madisonville branch.

Port Gibson, Miss.—Bids will be received until November 2 for \$20,000 of 5 per cent. bonds of Claiborne county. C. B. Dochterman is county treasurer, who may be addressed.

Sandersville, Ga.—F. F. Stacer of Sandersville has purchased the balance of \$22,000 of city electric-light and water-works bonds at a premium of \$250. The total issue is \$38,000.

Washington, Ga.—Bids will be received until noon on Wednesday, November 4, for \$40,000 of 4 per cent. courthouse bonds issued by Wilkes county. W. M. Sims may be addressed.

Clinton, Tenn.—The court has approved the issue of \$100,000 of good-roads bonds as voted. The road commissioners are T. A. Johnson, chairman; Wm. Owens, secretary, and A. K. Brooks.

Anderson, S. C.—The city of Anderson has voted \$50,000 of bonds to aid the Tennessee, Georgia & South Carolina Railroad. They are conditional upon the road's being in operation within two years.

Financial Notes.

The Belton Loan & Investment Co. of Belton, S. C., has increased its capital to \$20,000. W. K. Stringer is president.

There are 247 State banks and 70 na-

tional banks in Oklahoma, according to the quarterly statement of the bank commissioner.

Niagara Falls Excursion—Last Low-Rate Vacation Trip via Pennsylvania Railroad for the Season.

On October 16 the Pennsylvania Railroad Co. will run the last popular 10-day excursion to Niagara Falls from Baltimore for the present season. On this date the special train will leave Baltimore 9.05 A. M., York 10.45 A. M., arriving Niagara Falls at 9.45 P. M.

Excursion tickets, good for return passage on any regular train, exclusive of limited express trains, within ten days, will be sold at \$10 from Baltimore, \$9.35 from York, and at proportionate rates from principal points. A stop-over will be allowed at Buffalo within limit of ticket returning.

A special train of Pullman parlor cars and day coaches will be run through to Niagara Falls. An extra charge will be made for parlor-car seats.

An experienced tourist agent and chaperon will accompany the party.

For descriptive pamphlet, time of connecting trains and further information apply to nearest ticket agent, or address Geo. W. Boyd, general passenger agent, Broad Street Station, Philadelphia. †

Tour to the Pacific Coast via Pennsylvania Railroad, Account Meeting National Bankers' Association.

On account of the meeting of the National Bankers' Association, to be held at San Francisco, Cal., October 20 to 23, the Pennsylvania Railroad Co. offers a personally-conducted tour to the Pacific coast at remarkably low rates.

This tour will leave New York, Philadelphia, Baltimore, Washington and other points on the Pennsylvania Railroad east of Pittsburg, Wednesday, October 14, by special train of the highest grade Pullman equipment. A quick run westward to San Francisco will be made via Chicago, Omaha, Cheyenne and Ogden.

Five days will be devoted to San Francisco. Returning, the special train will run to Los Angeles, where two days will be spent among the resorts of Southern California. Santa Barbara, Del Monte, Salt Lake City, Colorado Springs, Denver and St. Louis will be visited on the journey eastward. The party will reach New York on the evening of November 4.

Round-trip rate, covering all expenses for eighteen days, except five days spent in San Francisco, \$190.

Rates from Pittsburg will be \$5 less.

For full information apply to ticket agents, or Geo. W. Boyd, general passenger agent, Broad Street Station, Philadelphia, Pa. †

For Sale—Fertilizer Factory.

Located on the St. John's River, at Jacksonville, Fla. This property can be bought very cheaply, and experts say that with a small outlay of cash its capacity can be doubled. For information and terms apply to

WILLIAM W. GORDON, Jr.

Attorney for A. Cosmo Little, SAVANNAH, GA.

RAILS.

We have for sale 250 tons of 35-pound choice Relaying Steel Rails, and can ship promptly from here.

STRINGFELLOW & WEBSTER, Richmond, Va.

LOOMS.

124 4x1 box 40 inch Bridesburg Roller Looms.
100 4x1 box 40 inch 16 Harness Witch Looms.
Finishing and other Textile Machinery for sale cheap.

J. RIDDELL, 1139 Silver Street, Philadelphia.

HIGH GRADE

7 per cent. Preferred Stocks.
In modern, up-to-date Southern Cotton Mills.
Other investment securities also.

F. C. Abbott & Company,
Charlotte, N. C.

PALMETTO BANK & TRUST CO.

COLUMBIA, S. C.

CAPITAL \$250,000.

GENERAL BANKING BUSINESS TRANSACTED
In the heart of the great cotton mill development of the South, our services are offered to investigate securities and enterprises.
High class securities offered for sale.

Hibernia Bank & Trust Co.

New Orleans, La.

Capital \$1,000,000 Surplus \$2,000,000

Deposits \$12,000,000

Transacts a general Trust and Banking business, offering every facility to Banks, Bankers and Corporations that their balances and responsibility warrant.

Foreign Exchange bought and sold.
Collections made on all points in the South.

Acts as Trustee under corporate mortgages for railroads and other corporations and as Registrar and Transfer Agent for stock.

High grade investment bonds bought and sold.

OFFICERS:

J. W. CASTLES, President.
G. R. WESTFELDT, Vice President.
JNO. J. GANNON, Vice President.
CHARLES PALFREY, Cashier.
GEORGE FERRIER, Assistant Cashier.
P. L. GIRAULT, Assistant Cashier.
L. M. POOL, Assistant Cashier.
WYATT H. INGRAM, JR., Trust Officer.

Florida Cent. & Peninsular 5s, Atlantic & North Carolina 6s, Raleigh & Cape Fear 5s,

And all Railroad Securities dealt in, but no new enterprises promoted.

F. J. LISMAN & CO., 30 Broad St., New York.

Specialists in Steam Railroad Securities.

MEMBERS NEW YORK STOCK EXCHANGE.

Companies Organized Under Corporation Laws of Delaware.

The Laws furnish, at least expense, ample rights to stockholders, with minimum restriction upon corporate action. Charters perpetual, not subject to repeal by the Legislature. Copy of the Law, Blank Forms and Estimate of Expenses furnished by

DELAWARE CORPORATION CO.
15 Market Street, WILMINGTON, DEL.

WE INVITE YOUR DEPOSIT ACCOUNT.

United States Mortgage & Trust Company

GEORGE W. YOUNG,
President.

55 Cedar Street. New York. 73d St. and Broadway.

CAPITAL AND SURPLUS FIVE MILLIONS.

Issues Travellers' Letters of Credit and Foreign Drafts.

RICHARD A. BLYTHE, COTTON WARPS AND YARNS, No. 114 Chestnut Street, PHILADELPHIA, PA.

BUCKINGHAM, PAULSON & CO., Commission Merchants, NEW YORK. COTTON YARNS, PHILA. CHICAGO.

CORRESPONDENCE AND CONSIGNMENTS SOLICITED.

Industrial Enterprises Organized and Financed.
If you have an Industrial Enterprise you want financed, write me, giving complete description and I will send you full information.

ROBERT ROSS ZELL, M. E., 204 McDowen Bldg., Birmingham, Ala.
Examiner for American Guaranty Company in the South.

INCORPORATE

Under a United States Law,

thus insuring respect and dignity throughout the world. No incorporation fee; no annual tax. Information furnished by

The District of Columbia Charter Co.

Columbian Bldg., Washington, D. C.

References by permission:

Central Natl. Bank, Natl. Capital Bank and James L. Norris, Patent Solicitor, Washington, D. C.

HUGH C. RISDON,

Industries Located, Organized and Financed.
Bond Issues Placed.

Industrial Plants developed, bought and sold.

Main Office, 431 BOND BLDG., WASHINGTON, D. C.

Seekers after and for Industrial Sites, Plants, Factories and Mills can be advantageously assisted by us. We organize, finance and develop Industrial Propositions. Charters obtained and stock and bond issues placed. Practical managers and superintendents of financial responsibility procured for manufacturing industries.

Correspondence solicited. Exploratory Book-let on application.

Address nearest address noted herewith.

HUGH C. RISDON, Industrial Broker.

P. O. Box 110, Washington, D. C.
P. O. Box 601, Norfolk, Va. P. O. Box 142, Atlanta, Ga.

Established 1835.

The Merchants National Bank, BALTIMORE, MD.

DOUGLAS H. THOMAS, President.
WM. INGLE, Cash. J. C. WANDS, Asst. Cash.

Capital, \$1,500,000.

Surplus and Profits, \$593,000.

Deposits, \$10,150,000.

Accounts of Banks, Bankers, Corporations and Individuals solicited. We invite correspondence.

BONDS.

\$7,000 GEORGIA STATE BONDS,
Registered; 4½%, \$1000 each, due January, 1900.
Yield 3.30%. All or any part for sale by

MARTIN & BRO.

STOCKS, BONDS AND REAL ESTATE,
AUGUSTA, GA.

MOTTU, DeWITT & CO.

Southern Investments,
NORFOLK, VA.

Correspondence Invited.

ALPHABETICAL INDEX OF ADVERTISERS.

Ads. marked * appear every other week. Ads. marked † appear in first issue of the month. Ads. marked ‡ not in this issue.

For Classified Index See
Pages 3, 5, 7, 9, 11, 13, 15
and 17.

| | | | | | | | | | | | |
|---------------------------------|--------|------------------------------------|--------|----------------------------------|----|-----------------------------------|----|--|----|-----------------------------------|----|
| Abbott, F. C., & Co. | 31 | Box 612. | 34 | District of Columbia Charter Co. | 31 | International Creosote & Con. Co. | 51 | N. J. Zinc Co. | 46 | Himmens, John Co. | 31 |
| Abrasive Material Co. | 24 | Bradley, Jas. S. | 36 | Dixie Mill Co. | 39 | International Mercantile Agency | 36 | Newman Mfg. Co. | 46 | Himpers, Thos. W. & Co. | 47 |
| Acme Road Machinery Co. | 44 | Bradley Pulveriser Co. | 43 | Dixon, Jos., Crucible Co. | 60 | International Trust Co. | 1 | Newport News Shipbuilding & Dry Dock Co. | 2 | Himpton, J. S. & G. F. | 42 |
| Adams, J. M. | 15 | Bread, J. M. | 38 | Dochterman & Co. | 33 | Ironides Co., The. | 19 | New York Equipment Co. | 2 | Hinton, S. H., Co. | 42 |
| Adams Laundry Machinery Co. | 3 | Brennan, P. C. | 7 | Dorrough, Z. T. | 33 | Jackson Mfg. Co. | 43 | Niagara Hydraulic Engine Co. | 61 | Skinner Chuck Mfg. Co. | 19 |
| Advocate. | 36 | Brim, A. W. | 34 | Downman-Dosier Mfg. Co. | 41 | Jenks, W. H. | 38 | Niagara Mach. & Tool Works. | 61 | Smith, F. L. & Co. | 42 |
| Affleck, George E. | 1 | Brobston, Fandig & Co. | 34 | Drake Standard Machine Works | 41 | Jenkins Bros. | 60 | Nicholson & Co. | 35 | Smith-Courtesy Co. | 17 |
| Alchison, Robt., Perf. Met. Co. | 44 | Brown, A. & F. Co. | 45 | Draper Co. | 50 | Jewett, Bigelow & Brooks. | 48 | Niles-Bement-Pond Co. | 2 | Smith, H. B., Machine Co. | 45 |
| Alabama Con. Coal & Iron Co. | 48 | Brown & Zortman Mch. Co. | 36 | Driscoll, John T., & Co. | 45 | Johnson, Charles F. | 38 | Niver, W. K., Coal Co. | 47 | Smith, S. Morgan Co. | 85 |
| Alabama Frog & Switch Co. | 37 | Brown-Cochran Co., The. | 36 | Dufur & Co. | 45 | Joseph, Isaac, Iron Co. | 58 | Nordyke & Marmen Co. | 47 | Southern Hotel. | 86 |
| Alabama Iron Works. | 22 | Brown Corlan Engine Co. | 1 | Dunn, Wm. J. | 34 | Kaiser, A. V., & Co. | 37 | Norfolk & Western Railway. | 67 | Southern Lime & Cement Co. | 8 |
| Alber & Bryne. | 7 | Brownell, Ths. & Co. | 15 | Dunning, W. D. | 31 | Kaolin Mfg. Co. | 36 | Norfolk & Western Railway. | 67 | Southern Cotton Oil Co. | 58 |
| Albergen Condenser Co. | 64 | Buchanan-Foster Co. | 47 | Durable Wire Rope Co. | 1 | Kasper Oats Cleaner Co. | 1 | Northern Electric Mfg. Co. | 5 | Southern Engine & Boiler Wks. | 52 |
| Alexander, S. B., Jr., Co. | 58 | Buckeye Iron & Brass Works. | 61 | Dushane, John A. | 34 | Keeler, E., Co. | 19 | Northern Pacific. | 39 | Southern Pipe Covering Co. | 27 |
| Alleghany Pin & Bracket Co. | 58 | Buckingham, Paulson & Co. | 31 | Dyer, D. H., & Son. | 6 | Keith, W. R. | 1 | Norton Emery Wheel Co. | 11 | Southern Railway Co. | 51 |
| Allington & Curtis Mfg. Co. | 60 | Buffalo Wire Works Co. | 44 | Eastern Granite Roofing Co. | 47 | Kelley, Benj. F., & Son. | 20 | Ober Mfg. Co. | 49 | Spidel, J. G. | 40 |
| Allis-Chalmers Co. | 14, 27 | Burrows Co., E. T. | 45 | Easton Fdry. & Mch. Co. | 46 | Kelley Island Lime & Transport | 20 | Ohio Fire Brick Co. | 53 | Spencer & Hall. | 56 |
| Allison, W. D., Co. | 57 | Burt Mfg. Co. | 3 | Edson Mfg. Co. | 50 | Kelly & Toneyhill Co. | 64 | Ohio Injector Co. | 23 | Sprague Canning Mch. Co. | 54 |
| Alpha Photo-Engraving Co. | 57 | Burton Veneer Co. | 53 | Edson Mfg. Co. | 50 | Kelly-Springfield Road Roller Co. | 64 | Old Dominion Iron & Nail Works. | 40 | Standard Caster & Wheel Co. | 60 |
| American. | 57 | Bushnell, G. H., Press Co. | 51 | Electric Material Co. | 50 | Kennedy, L. E., & Co. | 33 | Old Dominion Land Co. | 40 | Standard Electric Co. | 60 |
| American Air Compressor Wks. | 43 | Byers, John F., Machine Co. | 20 | Electric Supply Co. | 50 | Kennedy, Walter. | 7 | Osborn Engineering Co. | 7 | Standard Handle Co., Ltd. | 34 |
| American Blower Co. | 15 | Caine & Plitt. | 38 | Elkhart Frog & Crossing Works | 58 | Kentucky Electrical Co. | 58 | Osgood Scale Co. | 60 | Standard Scale & Sup. Co. | 45 |
| American Cement Co. | 9 | Caldwell, H. W., & Son Co. | 4 | Empire Chain Company. | 53 | Kilbourne & Jacobs Mfg. Co. | 2 | Otis Elevator Co. | 1 | Standish, A., Estate. | 1 |
| American Cotton Oil Co. | 52 | Caldwell, W. E., Co. | 26 | Engineering Agency. | 56 | Kilburn, Lincoln & Co. | 50 | Otto Gas Engine Works. | 6 | Starr, B. F., & Co. | 27 |
| American Elec. Sup. & Mfg. Co. | 36 | Cameron, A. B., S. Pump Wks. | 54 | Engineering Co. of America. | 56 | Kilby Locomotive & Mach. Wks | 57 | Page Coal & Coke Co. | 33 | State College of Kentucky. | 35 |
| American Excelsior & Mch. Co. | 49 | Cameron & Barkley Co. | 38 | Erie Pump & Engine Co. | 51 | Kilby Lumber Co. | 33 | Palmer, Harmon S., Hollow Con. | 23 | Steel Iron Supply Co. | 35 |
| American Frog & Switch Co. | 13 | Campbell & Clute Machine Co. | 1 | Eureka Fire Hose Co. | 15 | Kinnear Mfg. Co. | 3 | Old Dominion Land Co. | 40 | Sterling Electrical Mfg. Co. | 59 |
| American Locomotive Co. | 12 | Capitol Gas Engine Co. | 17 | Eureka Supply Co. | 44 | Kirby Lumber Co. | 33 | Old Dominion Land Co. | 40 | Stevens, H., Sons Co. | 60 |
| American Machine Co. | 41 | Capitol City Art Glass Works. | 33 | Ewing-Merkle Electric Co. | 58 | Knox, George & Co. | 7 | Old Dominion Land Co. | 40 | Stewart, John A., Electric Co. | 36 |
| American Machine Co. of Wil- | 54 | Carborundum Co. | 34 | Exchange Bank, Macon Ga. | 30 | Kohn, J. W., & Co. | 85 | Old Dominion Land Co. | 40 | Stief, Charles M. | 54 |
| minington, Del. | 54 | Cardwell Machine Co. | 51 | Fairmount Machine Co. | 50 | Koopel, Arthur, Co., Ltd. | 42 | Old Dominion Land Co. | 40 | Stilwell-Bierce & Smith-Vaile Co. | 18 |
| American Mfg. Co. | 29 | Carey, George H. | 38 | Farquhar, A. B., Co., Ltd. | 49 | Kriegshaber, V. H. | 8 | Old Dominion Land Co. | 40 | Stimpson, E. B., & Son. | 44 |
| American Pulley Co. | 28 | Carey, Philip, Mfg. Co. | 28, 47 | Faunt Le Roy & Co. | 41 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Stirling Co. | 17 |
| American Railway Supply Co. | 4 | Carlin Machinery & Supply Co. | 49 | Federal Mfg. Co. | 13 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | St. Louis Iron & Machine Wks. | 11 |
| American Roofing Co. | 47 | Carlson, Chas. W., & Co. | 6 | Fernbach Brick Mch. Co. | 43 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | St. Louis Portland Cement Co. | 8 |
| American Sheet Steel Co. | 23 | Carnell, George. | 44 | Fester, George G. | 37 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Stocker, George J. | 23 |
| American Ship Windlass Co. | 2 | Carolina Portland Cement Co. | 8 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Stowell Mfg. Co. | 47 |
| American Spiral Pipe Works. | 65 | Caroline Iron Works. | 43 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Stratton & Bragg Co. | 18 |
| American Steam Gauge & Valve | 20 | Carver Cotton Gin Co. | 50 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Straub Machinery Co. | 5 |
| Mfg. Co. | 20 | Cary Spring Works. | 54 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Strawling & Webster. | 31 |
| American Steam Pump Co. | 54 | Cas Mfg. Co. | 41 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Suebnor, G. L., Iron Works | 40 |
| American Supply Co. | 51 | Casey, D. L., Machine Co. | 56 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Sturtevant, E. B. Co. | 39 |
| American Tin Plate Co. | 67 | Castner, Curran & Bullitt. | 48 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Sturtevant Mill Co. | 42 |
| American Type Foundry Co. | 67 | Cattlett, Charles. | 6 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Sullivan Machinery Co. | 43 |
| Andrews & Johnson Co. | 39 | Chase Pulley Co. | 36 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Sutherland, Howard. | 67 |
| Andrews, Perry, & Bro. | 84 | Chattanooga Machinery Co. | 49 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Tallerday Steel Pipe & Tank Co. | 55 |
| Appraisal & Audit Co. of Amer. | 3 | Chattanooga Paint Co. | 49 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Taylor Iron & Steel Co. | 42 |
| Artistic Machine Co. | 35, 47 | Chattanooga Roof. & Fdry Co. | 7 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Thew Auto Shovel Co. | 42 |
| Armstrong, R. S., & Bro. | 37 | Chesapeake Iron Works. | 47 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Thompson, Son & Co. | 39 |
| Asphalt Ready Roofing Co. | 46 | Chesapeake Steamship Co. | 58 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Thompson, Henry W. | 29 |
| Athens Chamber of Commerce. | 56 | Chesapeake Steel Castings Co. | 12 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Titus, E. E. | 49 |
| Atkinson Machine Co., A. T. | 1 | Chicago Housewrecking Co. | 1 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Tobey & Kirk. | 49 |
| Atkins, E. C., & Co. | 19 | Chillicothe Evans Chain Co. | 60 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Tod, William, Co. | 16 |
| Atlas Engine Works. | 17 | Cincinnati Exhaust & Blow Pipe Co. | 34 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Tompkins, D. A., Co. | 51 |
| Audel, Theo., & Co. | 56 | Cincinnati Milling Machine Co. | 1 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Toomey, Frank. | 37 |
| Audit Co. of New York. | 30 | Clark, Clarence E. | 34 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Tracy, C. C., Co. | 6 |
| Aultman Co., The. | 41 | Clark & Hines. | 37 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Trampe, C. F. | 39 |
| Austin Mfg. Co. | 43 | Clayton. | 35 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Trask, Spencer, & Co. | 29 |
| Babcock & Wilcox Co. | 19 | Cleveland Belting & Mch. Co. | 35 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Treasury Department. | 31 |
| Bacon Air Lift Co. | 54 | Climax Mfg. Co. | 12 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Trenton Iron Co. | 44 |
| Badger, E. B., & Sons Co. | 1 | Clyde Machine Works. | 36 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Triumph Electric Co. | 69 |
| Badger Fire Extinguisher Co. | 1 | Codd, E. J., Co. | 48 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Tuape Tank Co. | 24 |
| Baeder, Adamson & Co. | 63 | Coe Mfg. Co. | 49 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Underwood, H. B., & Co. | 13 |
| Bailey-Lobby Co. | 10 | Cohen-Schwartz Ball & Steel Co. | 37 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Union Bond Co. | 46 |
| Bailey, John T., & Co. | 9 | Cohoes Iron Foundry & Mch. Co. | 3 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Union Iron Works Co. | 46 |
| Baird, Machinery Co. | 10 | Collier & Brown. | 6 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | United Iron Works Co. | 21 |
| Baker, H. C., & Co. | 36 | Columbia Refining Co. | 47 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | University School for Boys. | 33 |
| Baker, Stillwell & Hart. | 36 | Columbia Supply Co. | 28 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | U. S. Cast Iron Pipe & Fdy Co. | 6 |
| Baldwin Locomotive Works. | 13 | Columbian Cordage Co. | 60 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | U. S. Mineral Wool Co. | 48 |
| Balt Engine Co. | 17 | Columbus Iron & Steel Co. | 36 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | U. S. Mortgage & Trust Co. | 31 |
| Bald Wood Co. | 1 | Columbus Iron Works Co. | 22 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Valk & Murdoch Iron Works. | 19 |
| Baltimore Belting Co. | 17 | Columbus Machine Co. | 17 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Valley Iron Works. | 19 |
| Baltimore Engine Co. | 17 | Commercial Electric Co. | 59 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Van Norden, E. W. | 11 |
| Baltimore Warehouse Co. | 17 | Consolidated Air Lift Co. | 60 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Van Norden, E. W. | 11 |
| Baltimore-Maryland Engraving | 67 | Continental Iron & Steel Co. | 37 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Van Winkle, E. G. & Mch. Wks. | 11 |
| Balt. Shipbldg. & Dry Dock Co. | 60 | Continental Trust Co. | 39 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Viller Mfg. Co. | 42 |
| Baltimore Steam Packet Co. | 56 | Contractors' Equipment Co. | 35 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Virginia Bridge & Iron Co. | 22 |
| Barnes, W. F., & John, Co. | 11 | Contractors' Plant Mfg. Co., Ltd. | 51 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Vitrified Wheel Co. | 35 |
| Barnett, G. & H., Co. | 40 | Contractors' Supply & Equip. Co. | 36 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Vogt, Henry, Machine Co. | 23 |
| Barr & Elam. | 6 | Contractors' Supply Co. | 25 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Voorhes Rubber Mfg. Co. | 25 |
| Barr, H. G. | 10 | Cook's Adam, Sons. | 21 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Waggoner Watchman Clock Co. | 4 |
| Barratt, G. O., & Snow Co. | 40 | Cook Well Co. | 54 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Walker & Elliott. | 39 |
| Bates, James, Sons. | 40 | Cooper, C. G., & Co. | 17 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Walker, W. F., Mfg. Supply Co. | 29 |
| Bates Machine Co. | 15 | Cortisana Gas & Electric Co. | 37 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Walsh, J. J., Co. | 1 |
| Beach, H. W. | 43 | Cortisana Metal Roofing Co. | 47 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | War Department. | 1 |
| Beckley, A. J., Co. | 44 | Cotton Oil & Fibre Co. | 62 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Warner, Charles, Co. | 1 |
| Belmont Iron Works. | 45 | Cotton States Belt & Supply Co. | 10 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Warren Chemical & Mfg. Co. | 48 |
| Benbow Co. | 59 | Cox, Justice, Jr., & Co., Ltd. | 38 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Washington, A. H., Co. | 51 |
| Bennett, G. L. | 35, 36 | Creamery Package Mfg. Co. | 22 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Watson, Benjamin. | 37 |
| Bertch & Co. | 10 | Crescent, Geo. V., Co. | 42 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Watson, B. E., Co. | 34 |
| Bethford Drill & Tool Co. | 10 | Crocker-Wheeler Co. | 7 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Watson-Stillman Co. | 40 |
| Big Brushy Coal & Coke Co. | 1 | Crosby Steam Gauge & Valve Co. | 6 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Watwood, Henry. | 51 |
| 'Big Four'. | 1 | Cumberd Hyd. Osm. & Mfg Co. | 1 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Weaver, W. T., Power Co. | 19 |
| Bigelow, W. H. | 51 | Cushing Co., The. | 1 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Webster & Co., Warren. | 4 |
| Bird, F. A., & W., & Co. | 46, 47 | Cutler Mfg. Co. | 27 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Weir Frog Co. | 38 |
| Bird, Wm. M., & Co. | 8 | Cypress Lumber Co. | 24 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Weiss Supply Co. | 49 |
| Birmingham Rail & Loc. Co. | 37 | Dart, E. M., Manufacturing Co. | 20 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Westbrook, J. H., Fdy. & Mch. Co. | 49 |
| Blackley, A. B., & Co., Ltd. | 1 | Davis Acetylene Co. | 59 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Westinghouse Air Brake Co. | 14 |
| Blacklee Mfg. Co. | 16 | Davis Coal & Coke Co. | 48 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Westinghouse Electric & Mfg. Co. | 14 |
| Blanke, Ewald G. | 23 | Davis, F. H., & Co. | 36 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | Westinghouse Traction Brake Co. | 14 |
| Blithe, Richard A. | 31 | Davis Fdy. & Machine Works. | 53 | Fidelity & Deposit Co. of Md. | 36 | Kroger, J. H., & Co. | 34 | Old Dominion Land Co. | 40 | West Pascagoula Concrete Wks. | 5 |
| Board of County Commissioners. | 33 | Davis, G. | | | | | | | | | |

PROPOSALS.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., September 20, 1903.—Sealed Proposals will be received at this office until 3 o'clock P. M. on the 9th day of November, 1903, and then opened, for the construction (except heating apparatus, electric wiring and conduit) of the extension to the U. S. Post Office and Court House at Kansas City, Missouri, in accordance with the drawings and specification, copies of which may be had at this office or at the office of the Custodian at Kansas City, Mo., at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR**, Supervising Architect.

ADVERTISEMENT FOR SEALED BIDS.—It is ordered that the Clerk of the Board of Supervisors be and he is hereby directed to advertise for sealed proposals for repairing the Court House, according to plans and specifications now on file in his office. The repairs consisting of underpinning and putting a new foundation around three sides of said building. It is further ordered that the advertisement be inserted in the Manufacturers' Record, a journal published in Baltimore, Md. By order of the Board, this October 7th, 1903. According to the above, I will receive bids until 9 o'clock on Monday morning, November 2d, 1903.
Macon, Miss. Z. T. DORROH, Clerk.

NOTICE.

Notice is hereby given that the contract for the building of a new Court House in the City of Wickliffe, Ballard County, Kentucky, will be let at public outcry at the Court House door in the City of Wickliffe, on Saturday the 31st day of October, 1903; said house to be constructed in accordance with the plans and specifications adopted and now in the custody of the County Court Clerk of Ballard County. \$2500 over and above the salvage of the old building has been set apart for the building of said house. Said work to begin within 30 days after contract is closed, or as soon as practicable.

W. M. POWELL,
W. J. HAGOOD,
HENRY WATWOOD, } Committee.

Notice to Contractors.

BIDS will be received until 12 M. November 2nd, 1903, for the erection, and entire completion of a Market House Building, by the city of Monroe, Louisiana, according to plans and specifications prepared by L. M. Weathers, Architect of Memphis, Tennessee, which can be had from J. M. Breard, Chairman Public Building Committee, Monroe, Louisiana, and also at the office of L. M. Weathers, Architect, room 25, Cotton Exchange Building, Memphis, Tennessee. Each bid must be accompanied by certified NATIONAL BANK check of five hundred dollars, (\$500) payable to A. J. Renaud, Treasurer of the city of Monroe, Louisiana, checks to be held by said city for ten days in order to give successful contractor time to qualify, the check of successful contractor to be retained by the city until contract is signed with him, and bond has been given by him, and accepted by said city. The contractor must give satisfactory surety bond for fifty per cent. of the amount of the contract within ten days after contract is signed.

Should the contractor fail to make such bond, his check will be forfeited to the said city. The city reserves the right to reject any or all bids, or to accept any bid submitted, which may be found to be the best bid. Contractors will state time that they will require to complete the said Market House Building. Each bid shall be marked "Proposal for Market House Building," and addressed to J. M. Breard, Chairman Public Building Committee, Monroe, Louisiana.

Notice to Contractors.

For the furnishing of labor and materials for the erection of a new Courthouse and Jail, in accordance with the plans and specifications now on file in the Probate Judge's Office at Dothan, Ala., and prepared by Andrew J. Bryan & Co., Architects, of New Orleans, La., 124 Hennen Building, and under their supervision, the Board of County Commissioners of Houston County, Alabama, will receive bids up to 12 o'clock noon, Monday, November 2, 1903, at which time the same will be opened. All bids must be addressed to the "HON. GEORGE LESLIE," Probate Judge, and marked "COURTHOUSE PROPOSALS," the same must be in his hands on or before 12 o'clock of the above day, or they will not be received.

Each bidder must submit with his proposal for the Courthouse a certified check in the amount of Twenty-five Hundred (\$2500) Dollars, and also a certified check with his proposal for the Jail in the amount of One Thousand (\$1000) Dollars, as a guarantee of good faith that he will, if his bid should be accepted, make and execute a Surety Company Bond satisfactory to the Board, in the amount of the Contract Price for each building. In failure so to do, in either case, the check so submitted will be forfeited to the County as damages.

The two buildings will be constructed of such materials as are set forth in the plans and specifications. Concrete footings, hard-burned brick laid in cement in foundations. The exterior will be press brick and stone; the roof covered with slate, and the floors to be fireproof construction. Ceilings to be stamped steel.

Payments to be made in cash.

For information pertaining to the general financial conditions of the County, confer with Hon. George Leslie, Probate Judge. For information pertaining to plans and specifications, confer with the architects. All persons desiring to bid on the above work can secure plans and specifications upon application to the architects, together with proposal sheets. The Board of County Commissioners reserves the right to accept any or reject all bids.

NOTICE OF SALE OF BONDS.—The undersigned, treasurer of Claiborne County, Mississippi, will from this date until the 2nd day of November 1903, receive sealed bids for the \$30,000 00 5% bonds of Claiborne County, Mississippi, provided for at the October, 1903, meeting of the Board of Supervisors of said County, at Port Gibson. Said bids will be opened on said 2nd day of November, and will be sold to the highest bidder. No bid less than par will be considered. A certified check for \$500.00 must be deposited with each bid. C. B. DOCHTERMAN, County Treasurer.

GALVESTON, TEXAS, Oct. 7, 1903.
SEALED PROPOSALS, in duplicate, for grade raising at Galveston, Texas, involving over 11,000,000 cubic yards of filling, will be received by the Chairman of the Grade Raising Board, until 2 P. M., December 7, 1903, and then publicly opened. For information apply to E. R. CHEESBOROUGH, Secretary Grade Raising Board, Galveston, Texas.
C. S. RICKE, Consulting Engineer.

THE PAGE COAL & COKE COMPANY, Elkhorn, W. Va., will receive bids for one hundred (100) coke ovens, up to the yard level; also foundations and walls for tipple at operation on Belcher Branch of Tug River. Plans may be examined at their office at Elkhorn, W. Va.

E. W. TRAFFORD,

Consulting Electrical Engineer,

(Member Am. Inst. Elect. Engrs.)

27 Chamber of Commerce,

RICHMOND, VA.

Design and Supervision of Lighting,

Power and Railway Developments.

The Geo. A. Robinson Contracting Company, Inc.,
General Contractors and Builders.

Mobile, Ala.

BLUE PRINTS OF ALL KINDS

CHEAP.

ALSO TRACINGS.

EWALD G. BLANKE,

213 St. Paul St.,

BALTIMORE, MD.

W. E. SPEIR,

Contractor and Builder,

Brick, Stone, Wood, Iron and Steel Construction.

Office, the Bliss Bldg., 35, 37 & 39 B St., N. W.

WASHINGTON, D. C.

PITTSBURG

METER CO.

MAKERS OF

WATER METERS

AND

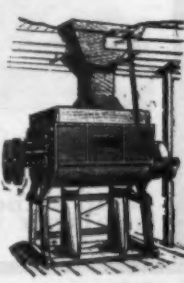
GAS METERS

OFFICE AND WORKS:

East Pittsburg, Pa.

Hard Plaster, Cement, Paint, &c.
W. D. DUNNING,
96 W. Water St.,
SYRACUSE, N. Y.

THE BROUGHTON DRY MIXER



Cold Rolled Strip Steel

We are now prepared to ship promptly

All gauges and qualities.

Prices quoted on receipt of specifications.

THE BOURNE-FULLER CO.

IRON, STEEL,

PIG IRON,

COKE.

Cleveland, Ohio.

Daily Capacity
150 Cars.

JOHN H. KIRBY, President.

Capital
\$10,000,000.00

Kirby Lumber Co.

General Office, Houston, Tex.

MANUFACTURERS OF

Saw Products of Long Leaf Yellow Pine Trees.

We can S4S up to 20x30.

We can Saw up to 70 ft.

Sixteen mills in operation, two more building. These mills are located on two of the greatest railway systems in the South, reducing difficulty arising from lack of cars to a minimum.

We are the Largest Producers of Yellow Pine Lumber in the World.

Address all correspondence to

No order too large for our facilities or too small for our prompt attention.

Correspondence Solicited.

V. A. LONGAKER,

General Sales Agent,

HOUSTON, TEX.

Over One Thousand

Prints Per Day made on

Patent Cylindrical Electric Copiers

Write for Catalogue.

PITTSBURG BLUE PRINT CO.

1505 P Park Bldg.,

PITTSBURG, PA.

The Capitol City Art Glass Works

C. V. PINION, — GEO. M. JOCHUM,
Proprietors.

Manufacturers of

Art Glass, Leaded Glass, Metal Sash and Bevel Plate Work, Memorial Windows, Church Work, Etc.

All Orders Promptly Filled.

705 Marietta St., ATLANTA, GA.
Long Distance Telephone.

The Boomer & Boschert

KNUCKLE JOINT

PRESS

For Baling Cloth, Paper, Yarn, &c.
Or for any other purpose requiring great pressure.

BOOMER & BOSCHERT PRESS CO.
386 W. Water St., Syracuse, N. Y.



SPECIAL Advertisements OF GENERAL Interest.

OPPORTUNITIES FOR INVESTORS.

ADVERTISING RATES FOR SPECIAL ADVERTISEMENTS:

| Inches | 1 time. | 2 times. | 3 times. | 4 times. |
|------------------------|-------------|-------------|-------------|-------------|
| 1..... | \$1.75..... | \$3.00..... | \$4.25..... | \$5.00..... |
| 2..... | 3.00..... | 5.50..... | 8.00..... | 10.00..... |
| 3..... | 4.25..... | 8.00..... | 11.75..... | 15.00..... |
| 4..... | 5.50..... | 10.50..... | 15.50..... | 20.00..... |
| 5..... | 6.75..... | 13.00..... | 19.25..... | 25.00..... |
| 6..... | 8.00..... | 15.00..... | 22.00..... | 28.00..... |
| 1/4 page (13 in.)..... | 16.00..... | 30.00..... | 42.00..... | 52.00..... |

Coal, Iron and Timber Lands.

FOR SALE.

Several desirable tracts of virgin long leaf yellow pine timber, suitable for turpentine or saw mill purposes. Detailed information given to bona fide purchasers.

W. D. DAVIS, Tampa, Fla.

Parties desirous of investing in Timber, Coal, Lime or Cement properties in West Virginia are respectfully invited to apply to

R. P. PEARSON,
Mining Engineer and Surveyor.
Parsons, Tucker Co., W. Va.

FOR SALE.

In Osceola and Brevard Counties, Florida.

300,000 ACRES. Will cut 3000 feet Long Leaf Yellow Pine per acre. Also 100,000,000 feet Large Cypress. Price \$2.00 per acre. After November 1st price will be \$2.50. Will divide.
J. R. PUTNAM, Portland Block, Chicago.

Southern Investments

COAL and IRON Properties
are my Speciality.

If you have a dividend-paying property to sell or wish to buy, write me. The larger the deal the better.

BANK REFERENCES FURNISHED.
R. E. WATSON, 401-402 Empire Bldg., ATLANTA, GA.

FOR SALE.

Cypress timber for cross-ties and telegraph poles, on 60,000 acres. Will cut upwards of 400,000 cross-ties, and over 200,000 poles; convenient to transportation, and a special bargain at the price, \$55,000—half cash.

W. D. DAVIS, Tampa, Fla.

Water Powers and Mill Sites.

The W. T. Weaver Power Company, ASHEVILLE, N. C.

now offers electric power, at very low rates for manufacturing purposes, from its Power Station on the French Broad River, four miles from the City of Asheville, N. C.

This Development Yields
3000 Horse Power.

Good Factory Sites, Cheap Power, Abundant Labor of the best quality, Good Railroad Facilities, Ideal Climatic Conditions, Pure Water for Bleacheries and Finishing Plants from a mountain creek running through the premises, having a discharge of 5,000,000 gallons in 24 hours, are some of the merits of this locality that will command the consideration of manufacturers.

For particulars, address

W. T. WEAVER, President.
ASHEVILLE, N. C.

UNRIVALLED LOCATION FOR INDUSTRIAL ENTERPRISES WATER POWER 24 Hours Use Daily.

\$15.00 per Horse Power per Year.
46 Feet Head and Fall at

Weldon, North Carolina

80 miles from Norfolk, Va. 12 hours travel from New York City. At junction of A. C. L. and S. A. L. Railway Systems. Steamboat to tidewater.

Free Building Sites, Banks, Schools, Electric Lights and Electric Power.

ROANOKE NAVIGATION & WATER POWER CO.

JAS. W. WILSON, President,
Write for Booklet. WELDON, N. C.

FOR SALE AT A GREAT BARGAIN.

A Fine Water Power

NEAR BALTIMORE, MD.

Improved by a good stone dam and stone pen stock and forebay. All stone work laid with best cement. Head and tail race, water wheels, boilers, steam engines, dwellings, 60 acres of land, etc. A splendid location for a mill or factory of any kind. Address

JOHN A. DUSHANE, Baltimore, Md.

Miscellaneous Properties and Investment Opportunities.

For Sale. The Old Pickens Plantation.

Located near Dyson's Post Office on C. & W. C. R. R., containing 1800 acres. 1600 acres in Greenwood County and 200 acres in Newbury County, S. C. Improvements—dwelling and twelve tenant houses. Iron bridge spans Saluda River, which flows through plantation. Best STOCK FARM in South Carolina. Price \$15,000.00. Address

Clarence E. Clark,
AUGUSTA, GEORGIA.

FOR SALE CHEAP.

Complete and Modern Furniture Factory.

For making medium suits. In a good town in North Carolina. Will sell as a whole or the machines separately, there being the usual complement of such machines.

Address Box 151, Florence, S. C.

WANTED.

Axe Handle Shapes and Turned
Axe Handles in the Rough,
Car load lots, for cash.

STANDARD HANDLE CO., Ltd.
KNOXVILLE, TENNESSEE

FOR QUICK ACCEPTANCE.

We offer for sale an up-to-date milling plant, with dry kilns and planing mill attached. At the junction of two trunk lines of railroad. Timber has been estimated to cut about 22,000,000 feet. Rate to Brunswick, Ga., a deep water port, \$6.00 per car. Price \$25,000 cash.

This is a going concern and is ready for buyer to step right into a paying business. Good reasons given for wanting to sell.
BROBSTON, FENDIG & CO., Brunswick, Ga.

Correspondence is Desired

WITH

Manufacturers of Vitrified Paving Brick, Face Brick, Hollow Building Block, Conduit Pipe, Sewer Pipe, and Sewer Brick, who may be looking for a location from which to supply the Eastern and Southern trade.

An exceptionally desirable location is available. The quality of clay shale is pronounced to be one of the best by the different people who have made exhaustive tests. The location has the advantage of low freight rates, and direct connection by three lines to the principal markets.

Free factory site will be given, and the shale sold outright at a low price. Labor is abundant and very cheap. Location healthful.

To meet the increasing demand for street and sewer improvements in the eastern cities, this location is peculiarly adapted.

For full particulars, address

HAGL,

"Manufacturers' Record."

FOR SALE.

Filter Sand Business,

including building and machinery, for \$3500. Plant now in operation.

For particulars, address

P. O. Box 180, Portsmouth, Va.

CHARCOAL

For Sale by Carload.

J. A. MATHIEU,
Georgetown, S. C.

FOR SALE.

Manufacturing Plant

in Indiana city of 12,000; four trunk lines. Steam coal \$1 per ton. Address

HARTWELL BROS., Chicago Heights, Ill.

FOR SALE.

Completely equipped plant for Agricultural Implements, Railroad Supplies, General Contracting, Fine Repair Business. Capacity, 200 men. Rail and water transportation. Beautiful residence city; southeast. For sale at great bargain.

WILLIAM MARTIN & COMPANY,
12 St. Paul St., Baltimore, Md.

WANTED.—Party to invest \$5000 in stock of company now being organized for manufacture of iron beds in Alabama. Eight per cent. and dividends guaranteed on stock. Address K. Z., Manufacturers' Record.

TO SETTLE AN ESTATE.—The Ferrier & Goldin Brick Yards, located at Catskill, (on the Hudson), New York, are offered for sale. Inexhaustible supply of best quality of clay. Capacity, 12,000,000 a year. Address PERCIVAL GOLDIN, Executor, Catskill, N. Y.

"Millions for Farmers"
TEXAS
TOBACCO
FACTS
Write for Full Information to
T. J. ANDERSON, General Passenger Agent,
HOUSTON, TEX.

Exhaustive tests prove that the finest grade of CUBAN LEAF Filler and Wrapper can be grown in East Texas on line of the SOUTHERN PACIFIC
Soils and Climate similar to famous Vuelta Abajo District of Pinar del Rio, Cuba.

So Says Secretary Wilson
U. S. Dep't of Agriculture.

WE OWN IDEAL VIRGIN RICE LAND, fifteen miles from New Orleans, on the Southern Pacific Railroad. Plenty of water for irrigation, Rich Soil suitable for Cotton, Corn, Sugar and Truck. Will sell very cheap now on long and easy payments, in tracts to suit. Special inducements to organize planting companies. Write at once for particulars.

O. H. WINEGAR, LLOYD POSEY,
Cont. Nat. Bank Bldg. Masonic Temple,
St. Louis, Mo. New Orleans, La.

FOR SALE.

A Fine Lumber Plant

IN EASTERN, N. C.

Outfit complete; railroad and equipment. Water and railroad connections. Fine timber supply.

An exceptionally fine plant. Owner needs more capital. Will sell all or an interest. Full investigation invited. Will show property, books of firm, etc., to probable purchaser.

LAWYER,

Box 326, Raleigh, N. C.

FOR SALE

A SAW AND PLANING MILL

Proposition on Railroad within 30 miles of Mobile, Ala. Capacity of saw mill, 25,000 feet per day, dry kiln and planing mill, 12,500 feet. 18,000 acres longleaf yellow pine timber lands that will estimate between 90,000,000 and 100,000,000 feet. 10,000 acres additional can be secured at reasonable prices in the same territory, and the whole can be logged with less than 9 miles railroad. To a party with sufficient capital to handle it this offers an exceptional opportunity to get into a going and profitable business. Reason for selling, other interests demand undivided attention. Write quick. This is a good thing and will not last long. Address

BOX 632, Mobile, Ala.

PATENT FOR SALE.

Angle Bar and Nut Lock for Railroad Track.

A small groove in angle bar and offset one-eighth inch at one end of bar and inch long. The key will lock itself and a head on other end, and if bolts become loose key can be drawn and bolts tightened and put back without damage to key. It is the best device for nut locks out. Railroad men say it beats anything they have ever seen for a nut lock—such as section foremen, roadmasters, superintendents, conductors, engineers. It is valuable for car building, and also for machinery where there is more than one nut. Model furnished free to buyer. Patent serial No. 158,997 will bear date of October 6, 1903. Address all bids to

WM. A. YOUNG, STEELE, MO.

WANTED.

To Sell or Trade Second-hand

Creamery Outfit,

For Bottling Works Outfit.

PULASKI ICE & PACKING CO.
PULASKI, TENN.



The Schwarz-System Brick Company,

SAND-LIME BRICK ENGINEERS.

Factories Built by Us are Built Right
and Run Right.

Chemicals Are Not Necessary to
Make Good Sand-Lime Brick.

6-8-10 BRIDGE ST.,
MARITIME BLDG.,

New York.

Factory Property.

Parties wishing to Buy, Sell or Lease, will find it to their advantage to consult us.

WE ARE HEADQUARTERS.

NICHOLSON & CO.

Real Estate and Factory Brokers,
150 Broadway, NEW YORK.

FOR SALE.

- 50 H. P. Engine, side crank, self-contained, 12x18 cylinder, flywheel 66" diameter, 14" face; all appurtenances, built by Casey & Hedges, Chattanooga, Tenn., and none better made. In use about three years, with best care.
 - 25 H. P. Boilers, Scotch marine, return tubular, stacks 25", 30" diameter; all appurtenances and pipe connections. Built by Casey & Hedges, and none better built. In use about three years, with best of care.
 - Worthington Prospecting or Sinking Pumps, 4 1/2"x3 1/2"x4", steam pipe 1/2" discharge 1 1/2", suction 2", capacity 3000 gals. of sandy, gritty water. In fine condition.
 - Centrifugal Pump, 2" discharge, 2 1/2" suction. Made by Thos. Williamson, Hockessin, Del. A splendid pump, in fine condition.
 - Flory Hoisting Engine, cylinder 3/4", friction drum 10" diameter, 16" long. Capacity 900 lbs., with single line.
 - Horse Power Hoisting Drums, with automatic safety attachment. Made by Thos. Carlinsons, Allegheny, Penn.
 - Fairbanks Trussed Lever Scales, Platform 10' x 9' 1/2", capacity 26,000 lbs.
 - Fairbanks Portable Scales, capacity 1000 lbs. large platform for barrows.
- Also a large lot of Pulleys, 6" to 36" diameter and 6" to 28" face, iron and wood split. Belting, Chesapeake brand, 2 1/2" to 52" and 4" to 14" wide.
- Rubber, 12, 13 and 18" long, 6" face.
- Also, complete machinery for washing clay.
- 1 Imhauser Watchman's Time Detector, 10 stations.

KAOLIN MANUFACTURING CO.

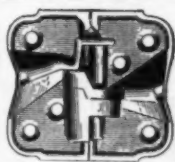
Waynesville, N. C.

FOR SALE.**2000 Barrels Coal Tar.**

CARLOADS AND LESS.

ARMITAGE MFG. CO., RICHMOND, VA.

Sweet, 8x10, Straight-Line, Automatic, 45 H. P. **ENGINE**
60 H. P. Horizontal, With all Attachments All in First-Class Condition.
BOILER
CLAYTON, 114 Liberty St., NEW YORK.



Cabinet and Builders' Hardware.

Specialties in Iron.
Wrightsville Hardware Co.
Wrightsville, Pa.

THE UNIVERSITY**School for Boys,**

1205 Cathedral St., Baltimore, Md.

(INCORPORATED).

W. S. MARSTON, A. B. & C. E., Prin'l.
23d Year Began Thursday, Sept. 25th.

The most fully-equipped Day School for Boys in the South. Primary, Junior and Senior Sections. In the Primary Section, in which the number is limited to 30, boys are taken as young as seven. In June of last year the school had successful candidates for admission to the Johns Hopkins, Harvard, Princeton, The Massachusetts Institute of Technology, Lehigh University and Haverford College.

There is a large and fully-equipped Gymnasium, Play Ground, Library and Reading Room. The buildings are the best lighted and ventilated of any in Baltimore.

Catalogues at the Johns Hopkins and at the book stores. For further information address the Principal at 1205 Cathedral St., or apply at the school.

BOARDING PUPILS.

A limited number of Boarding Pupils will be taken into the families of the teachers, where they will receive all the care and attention of home life.

STATE COLLEGE of KENTUCKY

COMPRISING LEXINGTON, KY.

School of Mechanical & Electrical Engineering,
School of Civil Engineering,
School of Mining Engineering,
School of Chemical Engineering, and
Summer School in Mechanic Arts.
JAMES K. PATTERSON, President.

Bargains in Machinery

FOR IMMEDIATE DELIVERY.

BOILERS.

- 175 H. P. Locomotive type, 150 lbs. pressure.
- 150 and 125 H. P. Locomotive type, 150 lbs. pressure.
- 250 H. P. Babcock & Wilcox, 160 lbs. pressure.
- 250 and 200 H. P. Heine, 150 lbs. pressure.
- 375 H. P. National, Watertube, 150 lbs. pressure.
- 267 H. P. Abendroth & Root, 150 lbs. pressure.
- return tubular, 72"x18", 125 lbs. pressure.
- return tubular, 66"x15", 100 lbs. pressure.
- return tubular, 42"x14", 100 lbs. pressure.

ENGINES.

- 16x30x48 Hamilton Corliss.
- 13x20x48 Armstrong & Sims.
- 13x10x15 McIntosh & Seymour.
- 11x17x14 Harrisburg Ideal.
- 22x48 Hewes & Phillips Corliss.
- 16x36 Green Corliss.
- 14x28 Delamater Corliss.
- 10x30 Allis Corliss.
- 18x18 Ridgeway McEwen.
- 18x24 Atlas automatic.
- 16x24 Atlas automatic.
- 13x21 Buckeye, tangye bed.
- 14x15 Erie City automatic.
- 13x12 Ideal automatic.
- 12x12 Armstrong & Sims.
- 9x9 New York Safety.
- 8x8 Climax automatic.

COMPRESSOR.

- 24 and 24x30 Rand Straightline type C, steam driven, 1350 ft. free air.

THOMPSON SON & CO.

114-118 Liberty St. NEW YORK CITY.

MENGEL'S MACHINERY EXCHANGE

- 15 H. P. Geyser Portable Boiler and Engine on wheels.
- 25 H. P. Portable Duvall on skids.
- 30 H. P. Baxter Engine and Boiler combined.
- 55 H. P. White & Middleton Gas or Gasoline Engine, 12" by 36".
- 60 H. P. Hamilton-Corliss Engine, directly connected to 25-ton Linde Ice Machine.
- 5 and 10-ton Vertical Compressors.
- 4 25 and 35 H. P. Horizontal Engines.
- Sharp's Collar and Cuff Ironer.
- Band Starcher and Ironer.
- 50 gal. Copper Starch Kettle.
- 60-light Dynamo.
- 35 110 volt Manhattan Arc Lights.
- Cylinder and Job Printing Presses.
- Paper Cutters.
- Complete Plants and Machinery of all kinds Bought, Sold and Exchanged.
- Nearly new 25 H. P. White & Middleton Marine Gasoline Engine.

Mengel's Mach'y Exchange, 12 E. Lombard St., Baltimore Md.

FOR SALE.**COTTON MILL MACHINERY.**

- 24 Foss & Pevey Cards with Lickers-in. Steel Fillet Clothing.
 - 8 Foss & Pevey Cards. Steel Fillet Clothing. (Recently Clothed.)
 - 4 Railway Heads
 - 2 Slubbers, 46 Spindles each.
 - 3 Speeders, 50 Spindles each.
 - 10,000 Slubber and Speeder Bobbins.
- Above machinery in good condition and can be seen in operation. A great opportunity to fit up a mill at low cost on coarse yarns.
- Address **B.**, care Manufacturers' Record.

WANTED.

150 to 200 H. P. Plain Slide Valve Engine; must be in guaranteed order. State price and full description. Also 50-light T. H. or Brush Arc Generators.

J. W. KOHN & CO.

14 Morwin Street, CLEVELAND, O.

Second-hand Dynamos, Motors and Electrical Appliances. All money savers. Repair anything. Have you a Dynamo or Motor for sale?

GUARANTEE ELECTRIC CO.

122-126 S. Clinton St. CHICAGO

FOR SALE-MACHINERY—Second Hand Circular Saws and saws, from 6 to 48 inches. Let us know what size you wish to trade. One second hand Self-feed Saw Mill, one second hand Pony Saw Mill, one second hand Double Saw Mill, one 30 H. P. Portable Engine, one Knight's U Mill, one Knight's Pay Knife Grinder, one Pay Mortiser, one 2 1/2 ft. Self-feed Pump, one 18 ft. P. Smory Wood Sluicing Machine, one 1000 lbs. Hydraulic Press, one 1000 lbs. Hydraulic Press, one Pay Surface, one Self-feed Rip Saw, one Pay Variety Saw, five Engine Governors, one Variety Wood-worker. One 1000 lbs. Hydraulic Press.

THE MILLER OIL & SUPPLY CO.
Indianapolis, Ind.

FOR SALE.

One Second-hand "BERRYMAN" HEATER AND PURIFIER, in perfect condition and guaranteed good as new. Will sell cheap for cash. Address **B. F.**, care Mrs. Record, Baltimore, Md.

ENGINES.

- 2 24-44x48 tandem compound Cooper Corliss.
- 20-36x48 tandem compound Hamilton Corliss, right-hand, wheel 22" diam. 25" face.
- 20-36x48 tandem Fitchburg.
- 18-34x48 cross compound Cooper Corliss.
- 4 16-32 tandem compound Cooper Corliss.
- 16-27x16 Westinghouse.
- 16-28x18 tandem Erie Ball.
- 15-25x16 Erie Ball cross compound.
- 14-24x14 Westinghouse.
- 13-22x13 Westinghouse.
- 2 13-23 tandem Williams.
- 13-19x15 tandem McIntosh & Seymour.
- 36x72 Corliss, 50-ton wheel.
- 26x60 Allis, 1500 frame.
- 26"x36" Hamilton Corliss.
- 22x42 Harris Corliss.
- 18x48 Knowlson & Kelly Corliss.
- 18x48 Allis Corliss.
- 15"x24 Buckeye, tangye frame.
- 14"x24 Buckeye, tangye frame.
- 2 13x18 Harrisburg Ideal.
- 11x12 McIntosh & Seymour.
- 9"x10 Armstrong & Sims.
- 9x12 Ball.

BOILERS.

- 250 H. P. Babcock & Wilcox, water tube.
 - 175 H. P. Sterling, water tube.
- These boilers are practically new.

Rossiter, MacGovern & Co., (Inc.)

Electrical and Steam Machinery,

Whitehall Bldg., 17 Battery Place, New York City.

110 State St., BOSTON, MASS.

Missouri Trust Bldg., ST. LOUIS, MO.

Machinery Bargains.**Engines.**

- 14x43 Harris Corliss.
- 12x36 Greene Corliss.
- 12x30 Lane & Bodley Corliss.
- 18x42 Bates Corliss.
- 18x28 Watertown Automatic.
- 12x24 Wright Automatic.
- 10x12 Ball Automatic.
- 10x16 Atlas Automatic.
- 8x10 Erie City Automatic.
- 7x8 Gem Automatic.
- 10x20 Throttling Governor.
- 11x18 Throttling Governor, with Riding Cut off.
- 44x14 Half Arch Front.
- 54x14 Hor. Tub.
- 54x15 Hor. Tub.
- 54x12 Hor. Tub.
- 100 H. P. Stirling Water Tube
- 10 H. P. Portable Boiler and Engine.

Wood Working Machines.

- 84" 3-Drum Royal Invinible Sander.
- Heavy Boring and Mortising Machine.
- Upright Mortiser.
- Saws, Planers, Tenoners, Shafting, Hangers, Pulleys, Belting.

CLEVELAND BELTING & MACHINERY CO.

8 Long Street, Cleveland, Ohio.

Wood Working Machines for Car Shops.

- One 26"x12" Atlantic double surfacer.
- One 14" Goodell & Waters vertical car shop jointer.
- One Atlantic car shop tenoner.
- One Greenlee four-spindle horizontal car boring machine.
- One Greenlee horizontal hollow chisel car mortiser.
- One 44" Prybill band saw.

Miscellaneous Wood Working Machines.

- One 28"x12" Fay single surfacer.
- One 12" Glen Cove inside moulder.
- One 6" Rowley & Hearnance four-side sticker.
- One Shimer No. 6, reversible spindle variety moulder.
- One Tidey swing cut-off saw.
- One Smith & Phillips window frame machine.

WICKES BROS.

95-97 Liberty St., New York City.

BOILERS!

Engines, Machinery in great variety at LOW PRICES.

Correspondence solicited by
FIDELITY MACHINE AND METAL COMPANY,
1406-22 Washington Ave., Phila.

Atlantic Works 4 side Timber Planer,
20"x14" capacity—Weight 17,000 lbs.

Worth \$2600—Price \$1200.

Used 1 year—\$300 worth extra knives.

G. L. BENNETT, 113 Liberty St., N. Y.

Blower Bargains.

Special offer in Roots Second-Hand Blowers, all sizes up to No. 5.

Address H. M. PAPWORTH,
120 Liberty St., New York.

BARGAIN—\$2600 EACH.

8 500 H. P. 17 and 83 1/2x28 Condensing Lake Erie Engines, 138 R. P. M. Excellent condition.

CHARLES F. JOHNSON,
605-7 Ellicott Square, BUFFALO, N. Y.

BOILERS.

- Four (4) 60"x16" R. T. (50 H. P.)
- One (1) 56"x14" R. T. (50 H. P.)
- One (1) 54"x13" Locomotive Portable (60 H. P.)
- One (1) 48"x13" R. T. (40 H. P.)
- One (1) 44"x14" R. T. (40 H. P.)
- One (1) 60"x7 1/2" Marine.
- One (1) 15 H. P. Portable on wheels.

ENGINES.

- One (1) 23"x48" L. H. Harris Corliss (300 H. P.)
- One (1) 48"x4" Double Cyl. Automatic.
- One (1) 17 1/2"x20" Side Crank.
- One (1) 14"x24" Side Crank.
- One (1) 15"x36" Side Crank.
- One (1) 15"x34" Side Crank.
- One (1) 13"x36" Side Crank.
- One (1) 12"x36" Side Crank.
- One (1) 10 1/2"x15" Side Crank.
- One (1) 10"x16" Center Crank.
- One (1) 9"x12" Center Crank.
- One (1) 8"x12" Center Crank.
- One (1) 10"x12" Vertical Marine.

HOISTING ENGINES.

- One (1) 6"x8" Single Cyl., Single Drum (no boiler.)
- One (1) 6"x10" Double Cyl., Link Motion (no boiler.)
- One (1) 6"x8" Double Cyl., Double Drum (with boiler.)
- One (1) 6"x10" Single Cyl., Single Drum (no boiler.)
- One (1) 5"x7" Engine and Boiler.

HEATER.

- One (1) 50 H. P.

ROCK CRUSHER.

- One (1) 10"x16" Hoagland.

WELL BORING OUTFIT.

- One (1) 15 H. P. Complete Rig.

LOG HAUL-UP.

- One (1) Lane Rig Complete.

PUMPS.

We have a large assortment of second-hand steam pumps in good condition. Also a large stock of second-hand pipe, valves, fittings, shafting, boxes, hangers, pulleys, wheels and axles.

Write for detailed specifications and prices.

Cameron & Barkley Company,

Charleston, S. C.

FOR SALE.

- 25 H. P. and 2 50 H. P. balanced valve centre crank engines.
- 12 H. P. and 2 15 H. P. locomotive boilers and engines on wheels.
- 15 H. P. Peerless traction engine.
- 10 H. P. locomotive boiler on wheels.
- 90 H. P. locomotive boiler.
- New Era graders, with 25 H. P. traction engines.
- Earth handling machinery, dump cars, railway, mining and contractors' equipment of every description.

If you want to buy or sell contractors' plant of any description, we can help you. Correspondence solicited.

CONTRACTORS EQUIPMENT CO.

Betz Building, Philadelphia, Pa.

BARGAINS—CHEAP.

- One Deane Duplex Comp. Pump, 16x26x11x18.
- One 30x13 Blake Pattern Crusher, nearly new.
- Three Hoisting Engines. Ralls, Locomotives.

L. E. KENNEDY & CO.

17 Broadway, New York City.

Do These Interest You?

- 1 20x30 Horizontal Engine, \$800.
- 1 8 1/2 x10 Single Drum Mining Engine, \$400.
- Other Hoisters, \$150 up.
- Boilers, 36x36—42x30.

CONTRACTORS SUPPLY CO.

Park Building, PITTSBURGH, PA.

Bargains in Second-Hand Direct Connected Units.

- One 50 K. W. "Eddy" generator directly connected to 13"x12" "Ames" horizontal automatic engine. 400 amperes, 125 volts, 230 revolutions.
- One 25 K. W. "Westinghouse" generator directly connected to 10"x12" "Ball" hor. automatic engine, 125 volts, 240 amperes, 300 revolutions.

L. F. SEYFERT'S SONS,

437-441 N. Third Street, PHILADELPHIA.

FOR SALE.

- 75 K. W. direct connected set.
- 115 volts, excellent condition.

J. C. M. LUCAS,

22 Light Street, BALTIMORE.

LATHES.

- No. 72 14"x5' Lodge & Shipley.
No. 78 14"x5' Lodge & Shipley.
No. 49 30"x10' Taper, Lodge & Shipley.
No. 47 30"x8' Lodge & Shipley.

THE LODGE & SHIPLEY MACHINE TOOL CO.

CINCINNATI, OHIO,

U. S. A.

FANS.

Central station man's opportunity to increase the day load. We offer for immediate delivery, all f. o. b. Cincinnati, the following 125 cycle fans:

- 150 G. E. swivel and turn, 12 in., 104 volt, \$5.00 each.
150 Emerson solid, 12 in., 52 volt., \$3 each.
200 Westinghouse solid, 13 in., 52 volt., \$3.50 each.
100 G. E. swivel and turn, 12 in., 52 volt., \$4.00 each.

JOHN A. STEWART ELECTRIC CO.
430 Sycamore St., Cincinnati, Ohio.

CONTENTS OF A MACHINE SHOP FOR SALE.

16x6 Davis & Egan engine lathe, comp. rest. 18"x8' Hendey-Norton engine lathe, comp. rest. 21"x10' Lathe & Morse engine lathe, plain rest. 22x16x8' Phoenix planer. 15' Hendey Shaper. 24' Hendey shaper. 30' Prentiss Bros. drill press, back geared, power feed. 70' Gang radial drill. 62' Hillis & Jones radial drill. No. 16 Garvin plain milling machine with vertical spindle attach. No. 2 1/2' Garvin Universal milling machine. No. 1 Pratt & Whitney screw machine, wire feed. No. 2 Garvin screw machine, plain head. No. 3 Pratt & Whitney screw machine, geared friction head. No. 4 Warner & Sweeney screw machine, friction head, wire feed, collets and tools. 2"x12" Garvin screw machine and tools. 1 1/2' automatic screw machine, Pratt & Whitney. 2' automatic screw machine, Pratt & Whitney. No. 1 Diamond universal grinder. 34" Colburn boring and turning mill, with chuck. No. 4 diamond face grinding machine. Underwood portable milling machine.

Photo and description on application

THE GARVIN MACHINE CO.
Spring and Varick Sts., New York.

FOR SALE.

- 1 20x36x48 Cross Compound Corliss.....\$1250
1 18x42 Harris Corliss, overhauled..... 1100
1 14x48 Corliss..... 600
1 20x50 Corliss, first-class..... 1000
1 500 H. P. Berryman Heater..... 150
1 400 H. P. Knowles Comp. Jet Condenser... 250
STEAM PUMPS, HEATERS, TRAPS.
1000' 1" Pipe in three coils, 1/2 net price new.
4 36" Davidson Vent. Fans..... \$25 each
1 No. 4 Pedrick & Ayre Compressor, used three months, \$350.
1 MORSE WILLIAMS ELEVATOR.....\$125
1 WHITTIER ELEVATOR..... 125

F. H. DAVIS & CO.

53 State Street, BOSTON, MASS.

FOR SALE.

- 1 22x52 R. H. Watts Campbell Corliss Engine.
1 10x12 Ideal Automatic Engine.
1 10x7x10 Worthington Duplex Pump.
1 15 ton Road Roller for sale or rent.
1 Little Giant Steam Shovel.
1 10x7x10 Worthington Duplex Pump.
Iron Tanks, 500 to 1000 gallon capacity.

JAS. S. BRADEN, 26 Cortlandt St., New York.

FOR SALE.

- 1-54 in. x 12 ft. horizontal tubular boiler.
1-12x30 horizontal engine.
1-7 and 14x10 fore and aft marine engine.
6 steam pumps—all sizes.

E. J. CODD CO., Baltimore, Md.

FOR SALE.

Two Pairs 16x20 Link Motion Engines.

Can be used for Hoisting Purposes.

CHAS. T. LEHMAN,

BIRMINGHAM, ALA.

FOR SALE.

Partial List Second-Hand Machines

- 13"x5' Pratt & Whitney, rise and fall rest, with taper.
14"x5' Putnam, rise and fall rest.
14"x5' Prentiss, rise and fall rest.
14"x5' Blaisdell, rise and fall rest, with taper.
15"x5' Foster, rise and fall rest.
15"x5' Prentiss, rise and fall rest, with taper.
16"x5' Pratt & Whitney, rise and fall rest, with taper.
16"x7' M. B. & O., plain rest.
18"x10' Fay & Scott, compound rest.
18"x5' Reel, plain.
18"x5' Lodge & Davis, compound rest and taper.
24"x10' No Name, incomplete.
26"x8' Betts Lathe, compound rest.
30"x8' Stark, plain.
35"x14' Betts Lathe, compound rest.
No. 1 H. & O. Turret.
No. 14 Garvin Special Forming Turret Lathe.
14"x4' Lodge & Barker Turret Lathe.
14"x5' Johnson Turret Lathe.
18"x5' Lodge & Davis Chucking Lathe.
Six-Spindle Milsen, Bement & Co. Arch Bar Drill.
28" Rickford Upright Drill.
30" Barnes Upright Drill.
Three-Spindle Upright Slatte Sensitive Drill.
Three-Spindle Garvin Sensitive Drill.
24"x24' 14' Bellers Planer, one head.
42"x42' 18' Whitcomb Planer, two heads.
42"x42' 18' Betts Planer, one head.
16' Smith & Mills Shaper.
No. 3 Keyseat Milling Machine.
No. 2 Garvin Plain Milling Machine.
No. 1 B. & S. Universal Milling Machine.
No. 4 1/2' Garvin Plain Miller.
No. 2 Garvin Plain Miller.
2 No. 2 Garvin Plain Millers.
1 No. 4 1/2' Brainard Plain Miller.
No. 4 Schlenkers Double-Head Bolt Cutter.
3' Pratt & Whitney Cutting-Off Machine.
12" Lowell Machine Co.'s Slotter.
Double-Head Pratt & Whitney Horizontal Boring Mill.
Cold Saw, 18" Blade, Pump and Pan.
30" Springfield Knife Grinder.
Wells Bros. Cutter and Reamer Grinder.
Springfield Tool Grinder, 36" Wheel, with pump.
2 Speed Lathes.
4 36 H. P. Portable Boilers.
1 Blacksmith Bellows.
Also a complete line of new machines. Correspondence solicited.

Brown & Zortman Machinery Co.,
PITTSBURGH, PA.

2ND-HAND TOOLS.

- Lathes.**
16 in. x 8 ft. Fitchfield.
26 in. x 38 in. x 18 ft. Fitchburg, blocks.
27 x 11 Geo. Place, heavy.
28 x 12 ft. Fay & Scott.
17 Stewart Speed Lathes.
18 in. x 8 ft., comp. rest, Lowell.
Axle Lathes, Bement (2).
Planers.
24 in. x 4 ft. heavy, Leeds.
26 in. x 6 ft. L. W. Pond.
48 in. x 42 in. x 18 ft. Sellers, 2 heads.
Shapers.
16 in. Geared, Western.
18 in. Ohio, crank.
32 in. Prentiss-Juengst.
Drills.
Ceiling, 3 ft. arm, Radial.
Ceiling, Boilermakers.
Screw Machs.
No. 60 Garvin, 1 1/2 in., with wire feed.
Garvin Hub Mch., 4 1/2 in. hole.
Grinders.
No. 2 Surface, Universal Co.'s.
24 in. x 18 ft. Springfield Surface.
Wood Working.
No. 1 Greenleaf, Auto. B. R. Cutter & Saw.
16 in. Goodell & Waters Planer, 1 1/2 in.
Prybil Planer and Joiner.
Ex. heavy 4 side Timber Planer and seven other machines.
Miscellaneous.
Sq. Arbor Gage Fox Lathe.
50 lb. Blum Drop Hammer.
50 lb. Merrill Drop.
Oil Separator, American.
No. 1 B. & S. Univ. Miller.
No. 2 F. & W. Screw Slotter.
13 in. Bement Slotter.
10 H. P. S. Y. Safety Engine, etc., etc.
200-lb. Bradley Helve Hammer.
300-lb. Beaudry Hammer.
4 in. Wh ton Gear Cutter.

Write your requirements.

G. L. BENNETT, 113 Liberty St., New York.

FOR SALE.

- 7 1/2 H. P. Genl. Elec. Motor, 220 volts, fine condition.
30 H. P. Chandler & Taylor automatic engine, fine condition.
25 H. P. Westinghouse vertical engine, fine condition.
8"x10" Valley automatic engine, New.
2, 5 and 7 1/2 H. P. New Olin gas and gasoline engines, etc.

LARGE LOT WOOD WORKING MACHINERY, IRON WORKING MACHINERY & STEAM PUMPS.

Horizontal and Vertical Boilers, All Sizes.

Large lot good second-hand leather belting, machinery tools and supplies for every branch of the mechanical trades.

WHAT HAVE YOU FOR SALE?

All kinds of machinery, engines, boilers, steam pumps, bought or exchanged.
Send for Machinery List No. 8

J. D. MALLORY, Baltimore, Md.

We have FOR SALE at

CROWN POINT, N.Y.

- 1 Smoke Stack, 8' diameter, 130' high, self supporting.
3 Hartman Stoves, complete, 66"x16".
3 Hartman Stoves complete, 46"x15".
1 9"x15" Farrell Stone Crusher.
16 Cylinder Boilers, 36"x41".
Air Tanks and Receivers from blowing engine.

HENRY A. HITNER'S SONS,

Huntingdon St. and Aramingo Ave., Philadelphia.

A LOCOMOTIVE BARGAIN

I HAVE FOR SALE FOR IMMEDIATE DELIVERY a Baldwin, standard gauge, 25-ton, 4-wheel, Switcher and Tender, with cylinders 14 in. x 22 in., drivers 43 in. centers, wheel base 7 ft., steam brake, automatic couplers. Price \$2,400. Can show engine in service here and recommend its condition.

WILLIS SHAW, 171 La Salle Street, CHICAGO.

BARGAINS FOR QUICK DELIVERY.

- No. 2 Gates Crusher.
No. 3 Gates Crusher.
No. 5 Style B, Gates Crusher.
Double column Drop Hammer, cylinder 14"x36"; fine order.
Good Second-Hand Engines.
12-ton Kelly Roller, fine as new.
New Well Drilling Machine, cheap.
Marion AA Shovel, fine condition.

CONTRACTORS' SUPPLY & EQUIPMENT CO., 232 Fifth Avenue, CHICAGO.

WE SELL
Engines, Boilers,
Pumps and Quarry
Supplies,
Concrete Mixers,
Horse Rollers,
Steam Drills,
Air Compressors,
Belting, Hose,
and a full line of
Contractors' Supplies.

FOR SALE.

Davis Calyx Drill,

Class F, with appurtenances and 10 H. P. locomotive type boiler on wheels, to run drill.

This drill has a capacity of 600 feet, and bores a 4" hole, 3" core. 306 feet of drill rods with drill. Also, 131 feet of 8" extra black pipe for casing, with drive head and shoe. Has been in use about ten months, with best of care. This drill is used for exploiting for minerals, and for driven wells. This drill is very complete in all its appurtenances.

R. L. MURRAY, Waynesville, N. C.

FOR SALE.

Fifty Whitin Welman Top Flat Cards, with 40 tops 40 ins. wide. Cylinder 42 x40 ins. Doffer 40x18 ins. Floor space 8 ft. 2 ins. x5 ft. 2 ins., with coilers. Production 125 lbs. per day. Some of these cards are only 3 years old, balance 8 years. They can be seen running. Also 150 sets Steel Clothing in extra good condition; 100 Doffers; 150 Mason Looms, 44"; 10 Ashworth Revolving Top Cards. For full information and price apply to

WM. J. DUNN,
Fall River, Mass

For Sale—ENGINES.

14"x24" Cooper automatic \$400; 14"x20" \$300; 12"x24" \$175; 12"x16" 11"x16" center crank, two 1 1/2"x24" Porter-Allen automatic \$350 each; Vertical engine 6"x25" \$35; 6"x20" \$35; One hundred horse power tubular boiler \$400; Six 70 H. P. tubular boilers \$300 each; One new 65 H. P. Scotch boiler \$450; One new 35 horse Scotch boiler \$100; One 35 H. P. portable boiler \$200; Forty, Forty-five, Fifty and Sixty horse tubular boilers; Ten vertical boilers; Fire engine, Cole Bros. make, \$500; Thirteen horse Russell traction almost new \$500; Two 12 horse tractions \$450 each; Ten horse portable engine on wheels \$125; Seven sawmills; One 48" Stedman disintegrator with rolls and screens \$300; One B. & W. 400 H. P. boiler, \$1200; One planer, N. Y. Steam Engine Co. make, 30"x20"x5'; New boilers and engines all sizes.

D. L. CASEY MACHINE CO.

Springfield, Ohio.

FOR SALE.

- BOILERS**—80 h. p. Hor. Tubular..... \$260
250 " Watertube..... 440
ENGINES—30 " McIntosh & Seymour 160
15 " Gas Engine, "Otto" 180
60 " Westinghouse..... 280
125 " N. Y. Safety..... 680
175 " Corliss..... 960
DYNAMOS—120 lights Edison..... 138
150 " Onondaga..... 148
200 " Mather..... 160
270 " Edison..... 190
510 " Edison..... 298
1000 " Edison..... 540

American Electric Supply & Mfg. Co.

27 Thames St., New York City.

FOR SALE.

Five Blowing Engines.

36" Steam Cylinder, 84" Air Cylinder, 34" Stroke.

Engines were built by Cuyahoga Engine Works and can be seen in operation at our plant at Columbus, Ohio. Can be delivered about Jan. 1st.

The Columbus Iron & Steel Co.

COLUMBUS, OHIO.

FOR SALE.

BRIDGES.

- 1 50 ft. steel plate girder bridge, double track.
1 500 ft., 4 spans 125 ft. each, riveted pier bridge, double track, 24 ft. wide.
Viaduct joining pier 570 ft. double track.

CARS.

- 73 80,000 lb. hopper bottom ore cars.
100 tons 80-lb. Relaying Steel Rails.

HENRY A. HITNER'S SONS,

Aramingo Ave. and Huntingdon St.

PHILADELPHIA, PA.

A SMALL AMOUNT

will buy

Pulverizing Machinery

for

Cement, Barytes, Talc, Foundry Facing, Etc.

We have three Cylindrical Pulverizers or Pebble Mills, made by the West Pulverizing Machine Co. These Mills will reduce your material cheaply and quickly.

They are New and Complete

With all parts.

FOR SALE BY

BAKER, STILLWELL and HART,

Birmingham, Ala.

FOR SALE.

One only 60 horse power Westinghouse engine, weighing 7,450 pounds; space—Length, 8 feet; width, 4 feet; height, 5 feet; steam pipe 4 inches; revolutions, 320. In good condition, at reasonable price.

LANDERS, FRARY & CLARK,

New Britain, Conn.

FOR SALE.

1 18x49" Left Hand Harris Corliss Engine. Thoroughly Repaired. GUARANTEED good as new.

CLYDE MACHINE WORKS,

39th St. and Union Ave. CHICAGO, ILL.

New and Second-Hand

Iron Tools and Woodworking Machinery

Corliss and Double Valve Engines for Trolley Roads and Electric Lighting Stations.

H. C. BAKER & CO.

114 N. 34 Street, Philadelphia, Pa.

Machine Tools AND Iron Works Machinery.

SHEARS.

10" Alligator, belt driven.
12" Alligator, belt driven.
20" Vertical, bar belt driven.
21" Vertical, double end, belt driven.
124" Bertsch sheet, steam driven.
Hot Bloom Shear, steam driven.
Lewis Billet Shear, hydraulic driven.
Newbold Rotary Shear, steam driven.

HAMMERS.

60-lb. Hackney Air Cushion, belt driven.
75-lb. Phillips & Justice, belt driven.
100-lb. Williams & White, belt driven.
100-lb. Merrill Drop Hammer.
5000-lb. Pittsburgh Steam Hammer.

PIPE-CUTTERS.

1 1/4 to 2" Saunders Pipe Machine, belt driven.
1 3/4 to 6" Pipe Machine, belt driven.
1 3/4 to 6" Eaton, Coe & Burnham, steam driven.

DRILLS.

20" Silvers, power feed.
24" Prentice, hand feed.
28" Back Geared, hand feed.
30" Harrington Wall Drill, power feed.
60" Box Radial, hand feed.

Also Lathes, Planers, Punches, Presses, Engines, Boilers and Rolling Mill Machinery.

WICKES BROTHERS,

808 Frick Building, Pittsburg, Pa.

ALSO

New York City. Chicago, Ill. Saginaw, Mich.

CLARK & HINES,

849 Egt. Bldg. BALTIMORE, MD.

Dealers in

Railroad Equipment and Supplies

ALSO

Street Railway Supplies, Mine, Mill
and Contractors' Supplies,
Steel Rails, Locomotives, Mine and
Contractors' Cars, Etc.

FOR SALE.

Several Hundred Tons of
1/4 inch

Open-Hearth Tank Plate

63 x 156-inch.

E. KEELER CO., Williamsport, Pa.

Steel Rails, Coal, Coke, Pipe, Structural Steel, Merchant Iron and Steel

Your orders solicited for any material produced
in Pittsburgh District.

EDGAR M. MOORE & CO.

PURCHASING AGENTS.

914 Farmers Bank Bldg., Pittsburgh, Pa.

NEW LIGHT STEEL RAILS.

12 lb. to 40 lb. per yard and Splices.
New Heavy Sections to 80 lb.
Narrow Gauge Railway Equipment.
Cars, Locomotives, Switches, etc.

WONHAM & MAGOR,

Columbia Building, NEW YORK.

Locomotives and Cars for Sale.

One 14-ton Baldwin, rear tank, standard gauge.
One 8-ton 7x19 Porter 4D Saddle Tank, 42" gage.
One 17-ton Climax Geared, 36" gage.
Five Climax logging cars, 36" gage.
Steam shovels, hoisting engines, etc.

THE EDGAR M. LOW CO.

Empire Building, PITTSBURGH, PA.

FOR SALE.

Rollers.

Two 70 H. P. Hor. Return Tubular. Two
65 H. P. Locomotive. One 25 H. P. Loco-
motive. One 25 H. P. Vertical. One 30
H. P. Vertical. One 10 H. P. Vertical.

Engines.

One 7x5 Vertical. One 10x12 Horizontal.
One 12x24 Horizontal. One 12x28
Horizontal. One 14x24 Horizontal. One
18x24 Horizontal. One 10x14 "Buckeye"
Automatic. One 13x15 "Ide" Automatic.
One 13x18 "Ide" Automatic. Two 10x12
"Ball" Automatic.
Also a lot of Pumps, Hoisting Engines,
Motors, Rails, Pipe, Wood Working Ma-
chinery, Shafting, Hangers, Wood and
Iron Pulleys.

ALL AT BARGAINS.

Huntington Machinery & Supply Co.
WILKES-BARRE, PA.

FOR SALE.

Immediate delivery at an attractive
price.

48-in. Riveted Steel Pipe

1/2 and 3/4 inch in thickness.

E. KEELER CO., Williamsport, Pa.

FOR SALE CHEAP.

1 120-K. W. Warren Alternator. 1 65-K. W.
Slattery Alternator. 1 37 1/2-K. W. Westinghouse
Alternator; 1100 volts, 125 cycles, single phase
switch, 6 instruments, transformers, leather belt-
ing, pulleys, shafting. Two 45 Standard Boilers.
Full list and special low prices on application.

CORSICANA GAS & ELECTRIC CO.
CORSICANA, TEXAS.

N. Y. Elevated R. R.

LOCOMOTIVES

Ready for Immediate Delivery.
Excellent Condition.

4' 8 1/2" Gauge, Forney Type, Cylinders
11"x14", 11"x16", 12"x16".
Suitable for Logging Roads, Contrac-
tors, Switching, &c.

BENJAMIN WATSON,
(Coffee Exchange Bldg.)
68 to 70 Beaver Street, N. Y. CITY.

Steel Rails, Cars, Locomotives, R. R. Supplies.

Alabama Frog & Switch Co.

ANNISTON, ALA.

Manufacturers of

Railroad Crossings, Frogs,
Switches, Switch Stands, Rail Braces, Etc.

FOR SALE.

1 Locomotive, 36" gauge, 11x16, 15-ton capacity.
9 Box Cars, 54' long, 60,000 lbs. capacity. 30 Box
Cars, 30' long, 40,000 lbs. capacity. 200 tons 56-lb.
Steel Relays. 150 tons 60-lb. Steel Relays.
50 tons 33-lb. Steel Relays. Also New Rails, 8
to 40 lbs.

L. WOLF & BRO.,

50-51-52 Mitchell Bldg., CINCINNATI, OHIO.

FOR SALE.

An almost new Sullivan "Bravo" Diamond Core
Drill, with complete equipments and with horse-
power attachment. Has been used 90 days only
and is in perfect repair; also one complete set of
bits to go with same. For further information
and price, address

GEO. G. FETTER,

Sec'y. Mineral & Mining Land Co.,
426 W. Main St., Louisville, Ky.

ST. LOUIS' LARGEST SCRAP
IRON HOUSE.

Cohen-Schwartz Rail and Steel Co.

Head Office and Plant: Main & North Market Sts.
Branch Office and Yards: Foot of Mound St.
ST. LOUIS, MO.
Correspondence Solicited.

FOR SALE—RELAYING RAILS.

1000 tons 40-lb. Steel Relaying Rails and Splices.
1500 tons 38-lb. Steel Relaying Rails and Splices.
1000 tons 60-lb. Steel Relaying Rails and Splices.
500 tons 63-lb. Steel Relaying Rails and Splices.
For Prompt Shipment.

Continental Iron & Steel Co.
25 Broad St., New York.

FOR SALE.

Two hundred and fifty tons of new forties; two
hundred and fifty tons new thirties; one 16" cyl.
Roger Locomotive, good condition; one 15" cyl.
Baldwin Locomotive, good condition; one 15-ton
stand. gauge Locomotive, for wood or iron rails;
two 28-ton 14" cyl. stand. gauge Locomotive, fine
condition. Apply

SABEL BROTHERS,
Jacksonville, Fla.

In Stock. Immediate Delivery. Rebuilt and Guaranteed.

20"x40"x60" Cross-Compound Corliss.
28"x60" Wetherill Corliss.
28"x60" Wetherill Corliss.
21"x42" Richards Corliss.
20"x48" Frick Corliss.
20"x42" Slater Automatic.
22"x22" Watertown.
18"x24" New York Safety Vertical.
16"x27"x16" Westinghouse Compound.
14"x24"x14" Westinghouse Compound.
12"x22"x20" Porter-Alien Automatic.
12"x20"x12" Westinghouse Compound.
16"x26" Wetherill Corliss.
16"x42" Harris Corliss.
16"x16" Green Automatic.
15 1/2"x15" Armstrong & Sims.
15"x30" Buckeye.
15"x20" Russell Automatic.
15"x18" Taylor-Buck Automatic.
15"x16" Ball Automatic.
14 1/2"x15" Armstrong & Sims.
14 1/2"x15" McIntosh & Seymour.
13"x12" Armstrong & Sims.
13"x14" Vertical Fitchburg Automatic.
12"x24" Buckeye Automatic.
12"x15" Ide Automatic.
11"x12" Armstrong & Sims.
11"x15" Atlas Automatic.
11"x12" Chandler & Taylor Automatic.
10"x16" Buckeye Automatic.
10"x15" Atlas Automatic.
3 75 H. P. Westinghouse Standard Automatics.
2 65 Westinghouse Juniors.
And many others. Stock is constantly
changing. Let me have a list of your wants.

BOILERS.

2 66"x18" Horizontal Tubulars, 125 lbs. Steam.
2 66"x18" Horizontal Tubulars, 120 lbs. Steam.
2 150 H. P. Wood Water Tube, practically new.
Large stock of new and second-hand Hor-
izontal, Vertical and Locomotive Boilers.
2600 H. P. Goubert Heater.
3 500 H. P. Berryman Heaters.
60 large Steam Pumps, up to 12" suction,
assorted sizes.
50 H. P. Otto Gas Engine.
40 H. P. Otto Gas Engine.
Large Stock of Dynamos, Iron and Wood
Working Machinery. Send for Special Cata-
logue of 2300 Pieces.

FRANK TOOMEY,

127-131 N. Third St. Philadelphia, Pa.

ENGINES.

One 18x24 Harris-Corliss Engine.
One 16x20 S. C. Washington Iron Works' Engine
self-contained.
One 13x22 S. C. Cardwell Engine.
One 11x18 S. C. Talbot Engine, Box-bad.
One 14x16 S. C. Engine.
One 11x15 Richmond Locomotive Works' S. C.
One 11x14 A. & C. C. Engine.
One 7x8 Vertical Engine.
One 6 H. P. Vertical Engine.
One 4 H. P. Vertical Engine.
One 20 H. P. Farquhar Traction Engine.
One 15 H. P. Aultman & Taylor Traction Engine
One 12 H. P. Birdsall Traction Engine.
One 10 H. P. Frick Engine and Boiler mounted
on wheels.

BOILERS.

One 80 H. P. High-Pressure R. T. Boiler, good
for 120 lbs. steam working pressure.
One 80 H. P. R. T. Boiler.
One 70 H. P. R. T. Boiler.
One 60 H. P. R. T. Boiler, Half-Front.
One 50 H. P. R. T. Boiler, Full-Front.
One 50 H. P. Economic Boiler.
One 40 H. P. R. T. Boiler, Half-Front.
One 35 H. P. R. T. Boiler, Half-Front.
One 20 H. P. R. T. Boiler, Half-Front.
One 15 H. P. Locomotive Type Boiler on wheels.
One 30 H. P. Vertical, and several smaller sizes.
Also several sizes of pumps and other machinery.
The above are in A-1 condition. Write for
particulars.

Jno. A. Waters & Co., Richmond, Va.

LOCOMOTIVES.

50-ton Freight and Switch Engines
for prompt delivery.

RAILS AND CARS.

MAY & SPALDING,
ATLANTA, GA.

CONTRACTORS

2 yd. Bucyrus, first-class condition.
1 1/2-yd. L. G. Crane Trac. Shovel, 2 mos.
1 1/2-yd. L. G. Spec. Trac. Shovel, 2 weeks.
45-ton Vul. Giant D Spec. New. Last Dec.
New Era Sr. Steel Level Grader, 3 mos.
65 1/2-ton 3-yd. Bloomberg Dump Cars, 3 mos
32 side & rotary 1 1/2-yd. W. Dump Cars, 1 wk.
4 miles nearly new 30-lb. Angle Joints & Frogs
THE MALES CO.
25 Broadway, NEW YORK.
713 Traction Bldg., CINCINNATI, O.

R. S. ARMSTRONG & BRO.

ATLANTA, GA.

IRON BROKERS,

And dealers in New and Second-hand Machin-
ery. Also carry in stock Hoisting Outfits and
Light Section Rail for contractors' use

FOR SALE.

Drain or Culvert Pipe.

125 lengths of 30" Cast Iron Pipe, practically as
good as new, at Charleston, S. C.

FRANK SAMUEL,

Harrison Building, PHILADELPHIA, PA.

FOR SALE.

Immediate Delivery.

AIR COMPRESSORS.

Two Rand Straight Line, "Class C," 18"x18"x24".
One Ingersoll-Sergeant, Class "G," Duplex, 20"
x30"x24".
One Norwalk (3 stage) 14"x14"x9 1/2"x16".
Two Rand Duplex (3 stage) 16"x14"x8 1/2"x4 1/2"
x22".
One Rand Duplex Corliss, 20"x20"x36".

BOILERS.

Four Babcock & Wilcox Water Tube, 208 h. p.
each, shaking grates.
Eight Horizontal Return Tubular, 66"x16".
Three Horizontal Return Tubular, 72"x12".
Four Horizontal Return Tubular, 72"x16".
Three Horizontal Return Tubular, 60"x16".
Nine Horizontal Return Tubular, 72"x18".

ENGINE.

One 20"x40" Buckeye, girder frame, band wheel
in half, 12"x31" face.

LOCOMOTIVES.

36" gauge Locomotives.
Four H. K. Porter 9"x14", saddle tank.
Two Vulcan 9"x14", saddle tank, built 1900.

RAILS.

200 tons 30-lb. steel relayers.
200 tons 35-lb. steel relayers.
500 tons 56-lb. steel relayers.

CARS.

Eighty 80,000-lb. Ore Hopper Cars, made by
Allison Mfg. Co.

PUMP.

1 Worthington Compound Duplex Condensing
Pump, 25"x43"x17 1/2"x36", 20" suction and 18"
discharge. Capacity, 3,000,000 gallons.
All of the above in A-1 order and ready for
immediate delivery.
We buy and sell Air Compressors, Engines,
Locomotives, Rails, Cars, Bridges, Boilers, Hoist-
ing Engines and Pumps, etc. Complete plants
purchased.

BOILER STACK.

1000 feet of 34" Boiler Stack, 5-16" material. This
stack is first-class in every respect and will be
sold at a bargain.

CYLINDER BOILERS.

8 Boilers, 40' long x 34" diam., good for 100 lbs.
steam pressure, without fixtures or fittings. For
quick sale will be sold cheap.

A. V. KAISER & CO.

222 South Third St., PHILADELPHIA, PA.

Machine Tools For Sale.

One 50" Niles Lathe, 12 1/2' between centers, with
iron raising blocks, which enable the lathe to
swing 72".
One 30" Wright Engine Lathe, 16 1/2' between
centers.
One 24" Niles Lathe, 21' between centers.
One 17" Prentiss Lathe, 10 1/2' between centers.
One 13" Barnes Lathe, 4' between centers.
One 38"x44" Niles Planer, with 12 1/2' bed.
One 30" Shaper.
One No. 2 Cincinnati Universal Milling Machine.
One 1 1/2" Acme Bolt Cutter.
One 200 pound Bradley Compact Hammer.

LIDDELL MACHINERY & SUPPLY CO.

MONTGOMERY, ALA.

Second-Hand Engines and Boilers for Sale Cheap.

One 14x20 plain slide valve, side crank engine.
One 12x20 plain slide valve, side crank engine.
One 11x16 Erie Automatic Engine.
One 60-horsepower Junior Westinghouse Auto-
matic Engine, cylinders 9 1/2-inch bore.
One 16x36 Sioux Corliss Engine.
One 54-inch by 14-inch tubular boiler.
One Kewanee Heater. All the above in first-
class repair and can make immediate delivery.
Address

FISHER MACHINE WORKS CO.
LEAVENWORTH, KANSAS.

FOR SALE.

17 NEW 36" gauge 30,000
lbs. capacity

Flat Cars

For Prompt Shipment.

Kilby Locomotive & Machine Works,
ANNISTON, ALA.

For Sale—Locomotives and Rails.

One 30x24 Baldwin Consolidation.
One 19x24 Dickson American type.
One 18x24 Dickson Mogul.
Three 17x22 Dickson Six-wheel Switchers.
One 15x22 McQueen American type. A bargain.
One 12x22 Dickson Four-wheel Saddle Tank.
One 12x16 Baldwin Forney type.
One 9x11 Porter Four-wheel.
All of the above standard gauge.

In 3 ft. Gauge we have:

One 12x16 Mason Forney type.
One 8x16 Porter Four-wheel Saddle Tank.
One 8x12 Shay Geared, built in 1896, (in South
Carolina).
One 7x12 Baldwin Four-wheel Saddle Tank.
One 6x10 Porter Four-wheel Saddle Tank.
Also New and Relaying Rails of all weights.

BIRMINGHAM RAIL & LOCOMOTIVE CO., Birmingham, Ala.

FOR SALE.

We own a choice lot of
**RELAYING
25 lb. and STEEL RAILS**
30 lb.
and Splice Bars and Spikes for same. Also a number of Frogs, and Stub and Split
SWITCHES.

If you want to buy either new or re-laying Rails—any weight, or Switches, write us.

ROBINSON & ORR,
419 Wood Street, Pittsburgh, Pa.

Contractors' Material

For Sale or Rent.

LOCOMOTIVES—One 10x16, 36" gauge with tender.
One 10x12 standard gauge Baldwin dummy type.
Three 16x24 S. G. American type, with tenders.
One 36" gauge 5½x7 Byers geared.
One 12-ton Davenport, 36" new.
One Baldwin 36" gauge in good order.
One 8x16, 42" gauge Bailey saddle tank.

CARS—Both narrow and standard gauge, dumps and flats.

STEAM SHOVELS—several little Giants, Marions, etc., too numerous to mention.

TRACTION ENGINES—Three, from 18 to 25 horse power each.

PUMPS—One Worthington compound duplex steam, 12x18½x10½x10.

HOISTING ENGINES—about 7½x10 d c d with or without boiler, about 8x10 d d s c without boiler, male and female friction hoist, and others.

Stationary engines all sizes, crushers, boilers, etc.

HARPER MACHINERY CO.

Park Row Building, New York.

Yards and Shops, Newark, N. J.



MANUFACTURERS

Light Steel Rails

16-20-25-30-35 and 40 lbs. per yard.

Prompt shipment on all orders.

SCHONTHAL IRON & STEEL CO.

Mills and General Offices,

CUMBERLAND, MD.

FOR SALE.

300 tons 60½-lb. steel relaying rails with angle bars, Alabama and Georgia delivery.

900 tons 70-lb. steel relaying rails with angle bars, Ohio delivery.

500 tons 48-lb. steel relaying rails with angle bars, Ohio delivery.

Second-hand locomotives, coaches, steam shovels, and other railway and contracting material.

THE ISAAC JOSEPH IRON CO.

525-531 Hunt St., Cincinnati, Ohio
523-524 Monadnock Block, Chicago, Ill.

RAILS—LOCOMOTIVES.

400 tons 35 and 40-lb. steel relay rails.

Locomotives—Narrow and standard gauge. 50 locomotives on hand.

Southern Iron and Equipment Co.

ATLANTA, GA.

40-Pound Relay Steel Rail.

200 tons for sale cheap.

WALTER A. ZELNICKER SUPPLY CO.
Department M. In St. Louis.

Shall we send you our Daily Rail and Equipment Bulletin?

FOR SALE.**NEW STEEL RAILS.**

12, 16, 20, 30, 35 and 40 lbs., with splice bars, bolts and spikes. Immediate shipment from stock.

JOHN J. HAMEL & CO.

House Building. Pittsburgh, Pa.

FOR SALE—RAILS.

For immediate shipment from stock, 8, 12, 16, 20, 30, 40, 70, 75, 80 and 85-lb. New Rails. Also 20, 25, 30, 40, 50, 56 and 60-lb. Relays, for prompt shipment. Cat Rails a Specialty.

RICHARDSON & CO., Inc.

200 Ninth Street, Pittsburgh, Pa.

**BOWEN & STREET EQUIPT. CO.**

HAVE FOR SALE

30 STANDARD AND NARROW GAUGE LOCOMOTIVES

for contractors' plant, lumber and mining railways, and over 200 flat, box and logging cars, coaches and large quantities of new and second-hand rail; also Steam Skidders; low rates to all points south.

OFFICE: 301-307 NEW ATLANTIC BLDG., NORFOLK, VA.

SHOPS AT Suffolk, Va.

FOR SALE.**New Light Steel Rails,**

ALL WEIGHTS,

WITH

Track Fastenings.**THE STEEL RAIL SUPPLY CO.**

100 Broadway,

NEW YORK, N. Y.

RAILS

FOR SALE.

Immediate Shipment.

New 16, 20, 25, 30 and 35-lb. Steel "T" Rails with complete joints.

We buy good Relaying Rails for cash.

Write us if you have any to offer.

HYDE BROS. & CO.

503 German Natl. Bank Bldg. PITTSBURG, PA

FOR SALE CHEAP.

Six Standard Gauge Locomotives.

In good condition. Weight on drivers 25 tons.

CAINE & PLITT,

824 Real Estate Trust Bldg PHILADELPHIA, PA.

Long Distance Telephone 3-52-58.

MANUFACTURERS**Light Steel Rails,**

12, 16, 20, 25, 30 and 35 lbs. with splices.

Prompt delivery.

Maryland Rail Co.

CUMBERLAND, MD.

FOR SALE.

1 9x14 Locomotive, 36" gauge.

9 Chicago Pneumatic Riveting Hammers.

3 Philadelphia Pneumatic Riveting Hammers.

1 125 H.P. return tubular Boiler, 125 lbs. pressure.

1 Air Compressor, 14-16x18, high pressure.

J. C. Saxton, 18 Broadway, New York City, N.Y.

FOR SALE.

Several Narrow Gauge Engines 10 to 20 tons; also standard from 40 to 60 tons. 1 16x24 Switcher in splendid condition. Stationary Boilers and Engines. 1 Perkins Shingle Machine as good as new. Agent for the Russel Wheel and Foundry Co. Cars. Also the Parker Steam Skidder.

J. H. MACLEARY & CO.

Suffolk, Va.

RAILS.

LIGHT SECTIONS, 8 TO 40 POUND.

Special Price to Dealers.

UNION RAIL COMPANY,

Farmers Bank Building, PITTSBURG.

NEW RAILS.

12,500 tons New Steel T Rails, 60, 70, or 80 lbs. per yard. July and August delivery.

Railroad Construction.

Steam and Electric Roads
Built and Financed.

JUSTICE COX, JR., & CO., LIMITED,

552-554 Bullitt Bldg., Philadelphia.
156-158 Broadway, New York City.

NEW STEEL RAILS.

We have a large quantity of steel, A. S. C. E. section, various weights, with or without fastenings, for immediate or future delivery. Also have "seconds" for sale.

O. W. DAVIS & CO., 68 Wall St., New York City.

FOR SALE.**New Steel Tee Rails**

80 to 80 lb. A. S. C. E. section.

Delivery guaranteed.

RAILWAYS BUILT AND FINANCED.

C. H. RUTTER, Easton, Penna.

FOR SALE.

STANDARD GAUGE PRIVATE HORSE OR STOCK CAR, adjustable stalls for carrying sixteen heads, complete in every detail, in first-class condition. BALDWIN STANDARD GAUGE DUMMY LOCOMOTIVE, 9x12. Has been thoroughly overhauled and put in first-class condition.

Both of the above will be sold at a low price.

POULTERER & CO.

410 Bullitt Building, PHILADELPHIA, PA.

STEEL RAILS.

NEW AND RELAYING AND ALL ACCESSORIES.

Frogs, Switches, Crossings, Etc.

GEORGE H. CAREY,

1 Broadway, NEW YORK.

J. E. FRANKS

SAVANNAH, GA.

RAILS, CARS and LOCOMOTIVES, FROGS, SWITCHES, Etc.

RAILS 8 to 40 lb. New Steel Relays, all weights.
LOCOMOTIVES 8 to 60 tons, Standard and Narrow Gauge.
EQUIPMENT and Supplies of all kinds.

WESTERN SUPPLY & MFG. CO.
East St. Louis, Ill.

FOR SALE.

Four (4) 18"x22" Cylinder Baldwin, ten-wheel Freight Standard Gauge Locomotives, weight about 42 tons; six drivers, 50" diameter; separate eight-wheel tender.

One (1) 14"x22" Cylinder, Baldwin six-wheel Locomotive (four drivers 50" diameter, pony truck in front, with separate eight-wheel tender.

Twenty (20) Flat Cars, 30' long, 20 tons, capacity, Diamond Trucks, M. C. B. Automatic Couplers, hand brakes.

Twelve (12) Coaches, 51' over all; carry 54 passengers; good coaches; cheap.

Two (2) Baggage Cars, same length; carry 28 passengers; all equipped with Westinghouse Air Brakes.

NEW YORK EQUIPMENT COMPANY,

18 Broadway (Room 526), New York.

2 Little Giant Steam Shovels, \$2500.00 each, Pittsburg

1 Little Giant Steam Shovel, \$1800.00, Pittsburg

Four 9x14 36" gauge Porter Locomotives, almost new, \$2500.00 each, Stewart, Pa., P. R. R.

Booth & Flinn, Limited.

Pittsburg, Pa.

SPECIAL LOT

Excellent Condition

Immediate Delivery

LOCOMOTIVES

All Types and Weight

COACHES

Excellent Condition

CARS

Of All Description

Very Attractive Prices

FITZ-HUGH, LUTHER CO.

(Successors to Fitz-Hugh & Co.)

141 Broadway, NEW YORK.

Main Office—Monadnock Block, CHICAGO.

**RELAYING
56 and 60-lb.
RAILS.**

With heavy angle splice bars

An unusually fine lot of relays. Quick shipment.

HENRY LEVIS & CO.

Philadelphia, Penna.

ELKHART FROG & CROSSING WORKS, Elkhart, Ind.

FROGS, SWITCHES, CROSSINGS, STANDS, ETC.



SOLE MANUFACTURERS OF **FRED G. WEIR'S**
IMPROVED RIGID & SPRING FROGS, CROSSINGS
SINGLE & THREE THROW SPLIT SWITCHES.
FIXED & AUTOMATIC SWITCH STANDS, STEEL
DIE FORMED RAIL BRACES, SWITCH FIXTURES, ETC.





Our Dust Exhaust Systems
are the nearest approach to Perfection yet reached in this class of work.

THEY MAKE YOU MONEY.

We Modernize Old Systems.
Write Today For Prices On

Fans, Dust Separators and Complete Dust Collecting Systems.

CINCINNATI EXHAUST & BLOW PIPE CO.
324-330 W. THIRD ST. CINCINNATI OHIO.



CYCLONE DUST COLLECTOR

DIXIE MANUFACTURING CO
BALTIMORE, MD.

Exhaust Fans,
Exhaust and Blow Piping,
Cyclone Dust Collectors,
Dust Collectors,
Automatic Furnace Feeders.

Mechanical Experts in
Removal of
Shavings, Dust, Lint and Odors.

Estimates Furnished and All Work
Guaranteed.

Correspondence Solicited.



Directed Connected Fan and Engine.

A & J STEEL PLATE FANS

Heating,
Ventilating,
Drying, Etc.

ANDREWS & JOHNSON CO.
Chicago, * * * * * Illinois.



ARE YOU TROUBLED with dust from your **EXHAUST FANS?**

THE "Hartford" Patent Improved Dust Separator
will handle shavings, sawdust, lint, seeds, emery dust, cereals, etc.
Leaflet No. 53-H tells all about it.

We also Install Complete Exhaust Systems.
THE HARTFORD BLOWER CORP.
Hartford 110 Suffolk St. Conn.

SEND US YOUR ORDERS FOR Crucible Steel Castings

We begin casting the day following
receipt of patterns.

NORTMANN-DUFFKE FOUNDRY CO.

26th Ave., Layton Park,

MILWAUKEE, WIS.

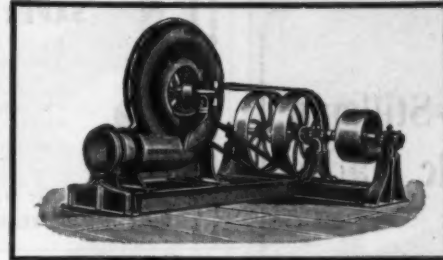
BRASS, BRONZE AND ALUMINUM CASTINGS

OF EVERY DESCRIPTION.

MIAMI MANUFACTURING & PLATING CO. HAMILTON, O.

Sturtevant Blowers

Of Every Conceivable Form for
Every Conceivable Purpose.



Although originally designed for use in connection with cupola furnaces and forges, these blowers are adaptable for any purpose where pressures up to 16 ounces per square inch are to be maintained. The shell is of cast iron, the shaft of high-grade steel, carefully finished, and the wheel of thin galvanized steel, mounted on extra strong arms and accurately balanced. The great length and special oiling features of the journal boxes render them practically non-heatable. Steel plate fans designed for operation at low pressures to provide ventilation, mechanical draft, etc., are built in a complete line of regular and special sizes up to wheels 15 feet in diameter, arranged to be driven by belt, direct connected engine or motor.

B. F. STURTEVANT CO., Boston, Mass.

New York. Philadelphia. Chicago. London.

159



HICKS LOCOMOTIVE AND CAR WORKS.

**LOCOMOTIVES,
COACHES
AND
CARS**

of all descriptions.

F. M. HICKS,
277 Dearborn St.
CHICAGO.

The Diamond State Steel Co.



DIAMOND POINT SPIKE.

SPECIALTIES.

Diamond Point Spikes (Patented). Best for soft wood ties.
Crescent Point Spikes (Patented). Best for hard wood ties.
Diamond Double Neck and P. R. R. Standard Spikes, with
rolled points, for either hard or soft ties.
Diamond Tie Plates (Patented).
Diamond Rail Joint (Patented).
Churchill Joint (Patented).
Diamond Grip Thread Track Bolts.
Track Bolts with cut and cold rolled thread.



CRESCENT POINT SPIKE.

ALSO MANUFACTURERS OF

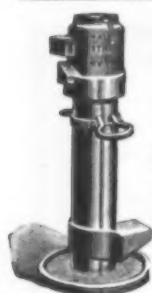
Pressed Point Railroad and Boat Spikes of all sizes, Plain and Angle Joints of
iron, soft and high carbon Open Hearth steel, Merchant Bar Iron and Steel,
Angles and Channels, Horse and Mule Shoes, Rivets, Machine Bolts, Etc.

Main Office and Works, Wilmington, Del.

Philadelphia Office - - No. 503 Real Estate Trust Bldg.

New York Office - - No. 29 Broadway.

Chicago Office - - - No. 934 Monadnock Block.



**Built
Wisely
and
Well.**

Watson-Stillman Hydraulic Jacks

from first to last are carefully constructed. We know that it's a question of reliability and that when a Jack is pressed into service it must not fail. Failure may mean damages to life or property.

If you were to read over our Jack Catalog you would know why Watson-Stillman Jacks will not fail when put to test.

Catalog sent on request.

Watson-Stillman Co.

201-11 E. 43d St., NEW YORK.
453 The Hookery, CHICAGO.

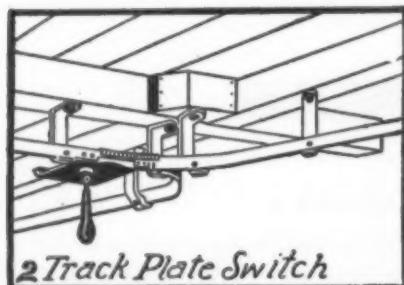
BATES' Hand Elevators.

30,000 in use.
60 years in the Elevator business.
JAMES BATES' SONS,
BALTIMORE, MD.



They can be built with any size platform and to lift almost any load. Automatic hatch doors are provided for each floor when desired. Write for Illustrated Catalogue.

PARK MANUFACTURING CO., CHARLOTTE, N. C.



2 Track Plate Switch

MARYLAND FOUNDRY & MACHINE CO.
BALTIMORE, MD.
Manufacturers of **Passenger and Freight
ELEVATORS.**

Chain Hoist

EFFICIENCY

Fully 20 per cent. higher

than the best of other makes, and that's only one of the distinguishing features of

SPEIDEL'S ECONOMIC SAFETY HOIST

It's the most original hoist of this character. Others are simply imitations with additional friction making wheels added.

BOOKLET FREE.

J. G. SPEIDEL,
READING, PA.



90%

of all the Buckets used in the construction of the N. Y. Rapid Transit Subway are manufactured by the

**G. L.
Stuebner
IRON WORKS,**

167-177 E. 34. St., Long
Island City, N. Y.

Catalogue No. 444 gives full information of Buckets, Narrow Gauge Railways, Cars, etc., for every purpose.

FREIGHT ELEVATORS,

Hand and Belt Power.

POWER HOGSHEAD SCREWS.

**THE J. B. WESTBROOKS FOUNDRY
AND MACHINE CO.**

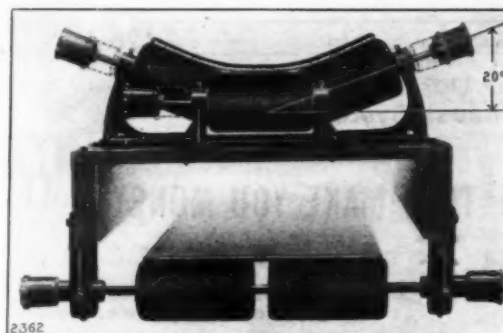
DANVILLE, VIRGINIA.

General Founders and Machinists.

INDEPENDENT OF
A TRUST

Belt Power Elevator

COMPLETE
WITH OUR NEW
"BELT-POWER
WINDING
APPARATUS"



"There Is No Universal Elevator or Conveyor."

SHALLOW-TROUGH BELT CONVEYORS.

The twenty years' experience of this Company in the use of Belt Conveyors has proven conclusively that the more nearly a Belt Conveyor approaches the old type of flat belt, the longer will it last. Intensifying the carrying capacity results in lowering the first cost, but in exorbitantly increasing the cost of maintenance.

Illustration shows the type of troughing idlers which we use for belts 20 inches and wider. The pulleys are set at an angle of 20° with the horizontal, resulting in a shallow trough. The belt assumes a practically uniform curve crosswise, without strain or injury.

Write for Our New Circular on Belt Conveyors.

LINK-BELT ENGINEERING CO.

Nicetown, Philadelphia.

New York:
49 Dey St.

Pittsburgh:
Park Bldg.

Savannah:
Sorrel Bldg.

Chicago: Link-
Belt Mach. Co.

ELEVATORS.

Passenger and Freight.

HYDRAULIC.
ELECTRIC.

16,000 SOLD.

BELT.
HAND.

MORSE, WILLIAMS & CO.

PHILADELPHIA.

BALTIMORE.

ATLANTA.

From a recent purchaser of the Morse Belt Power Freight Elevator operated by reversing motor and controller: "The elevator is working perfectly. We are highly pleased with the elevator and machinery."

HOOPE & TOWNSEND CO.

Philadelphia, Pa.

Make NUTS

Square
and
Hexagon.

3/16 in. to 6 in.

THE J. W. REEDY ELEVATOR MFG. CO.

OVER
15,000 IN
OPERATION
THROUGHOUT
THE WORLD

PASSENGER AND FREIGHT
ELEVATORS

83-85-87-89-91 ILLINOIS STREET,
120-122-124-126 INDIANA STREET,
CHICAGO

ELECTRIC
STEAM
HYDRAULIC
BELT
HAND

POWER
TRANSMISSION
APPLIANCES

TRAVELING
AND JIB

CRANES

THE
CASE MFG. COMPANY,
COLUMBUS, OHIO.



Handling and Transporting Material--Cheaply.

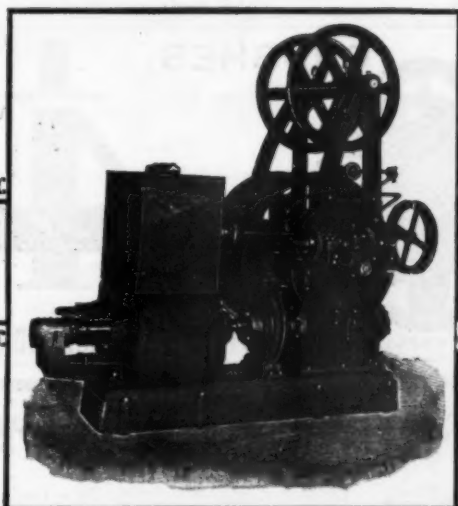
That is the problem which confronts many producers today. For handling and transporting material in any form economically, our appliances are particularly applicable. Especially so, where large quantities are handled: as in a boiler room for example.

We work out problems—gratis: for engineers and prospective customers, submitting designs and estimate for approval.

The Aultman Co., Canton, O.

No. 701 Empire Bldg., Pittsburg; Graham Bldg., New York;
No. 716 Fidelity Mutual Bldg., Philadelphia; Charleston, W. Va.

ELEVATORS



Electric Passenger and Freight Elevators.

This is machinery on which human life depends, and in equipping your building you cannot afford to take any chances. Our policy has been: "Be particular in the smallest detail. Do not cheapen production at the expense of the machine." By adhering to this we are enabled to sustain the reputation we have gained.

Write for information.

Louisville Elevator Company
INCORPORATED.

CHICAGO. HOME OFFICE: LOUISVILLE, KY. ST. LOUIS.



THE Kinkade & Liggett co.

Passenger and Freight ELEVATORS
COLUMBUS, OHIO.

Robins Belt Conveyors



Robins Conveying Belt Co.
19-22 Park Row, N. Y. City.

CRANES
ELECTRIC
CRANES
HAND
CRANES
JIB

For Every Service.

McClave, Hamilton & Co.
85-89 Liberty St.,
NEW YORK, N. Y.

THE HAVEN ELEVATOR CO.
High Service Elevators, Passenger, Freight, Hydraulic, Electric, Belt and Hand Power. Write for Estimates.
CINCINNATI, O.



ELEVATORS



Electric, Hydraulic, Belt and Hand

For Passenger or Freight Service.

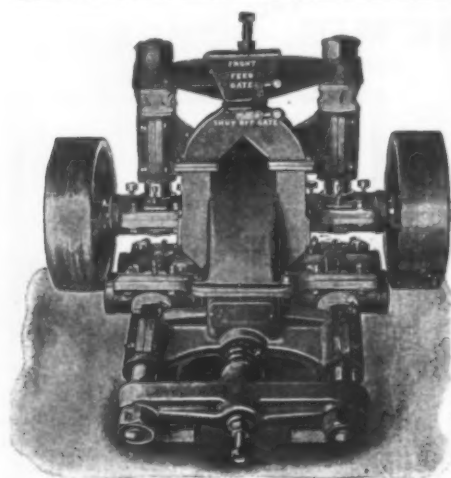
Write for Circular 16.

AMERICAN MACHINE CO.,
Louisville, Ky.



Freight Elevators
FOR
Hand, Belt and Electric Power.

PARKHURST BROS. & CO., Indianapolis, Ind.



KENT MILL

GRINDS

50 TONS PEBBLE ROCK
60 TONS TENNESSEE ROCK
330 Bbls. NATURAL CEMENT
144 Bbls. PORTLAND CEMENT

EVERY 10 HOURS.

25 HORSE POWER

KENT MILL CO., 170 Broadway, NEW YORK.

THE LEADERS:

Davidson
Tubemills.Smidth
Ballmills.

50%

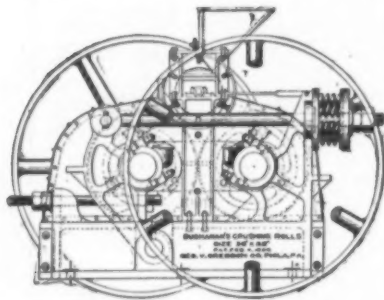
of the entire output of Portland Cement manufactured in the world is made in factories where these machines are installed.

F. L. SMIDTH & CO.
ENGINEERS,

66 Maiden Lane, Cor. William Street,
COPENHAGEN,
Vestergade 29.

LONDON,
9 Bridge St., S. W.

Buchanan's Crushing Rolls.



Drawing of 36"x22" Rolls, weight complete 37,000 lbs. Hammered Steel Shaft, 9" in bearings, 11 in. center. Interchangeable phosphor bronze bearings, 9"x22 1/2". Crushing shells, 4 1/2" thick, of open hearth or manganese steel. Automatic continuous feed and dust covers for dry crushing.

GEO. V. CRESSON CO.,
Philadelphia and New York.

Our Roll are strictly HIGH GRADE. All sizes from 18" up to 60". Send for Catalogues on Buchanan's Ore Breakers and Magnetic Separators.

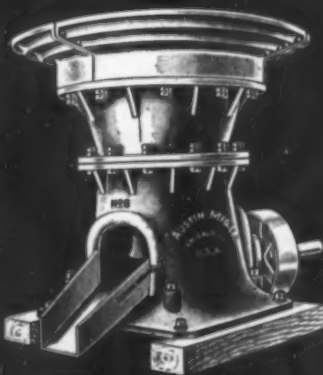
Power Transmitting
Machinery.

C. G. BUCHANAN,
Consulting Engineer.

Department of
Crushing and Concentrating
Machinery.

141 Liberty Street,
NEW YORK, U. S. A.

Austin Gyratory Crushers



Technically and mechanically without a fault.

Least liable to get out of repair and most economical in consumption of power.

Made in nine sizes.

In general use everywhere.

Write for the handsomest Crusher catalogue ever issued.

Also Dump Cars and Contractors' Machinery.

Austin Mfg. Co.

CHICAGO

BRANCH OFFICES: NEW YORK PITTSBURG ATLANTA ST. LOUIS

FIRST SUCCESSFUL TWO-PART TOOTH.
PATENTED

Manganese Steel Shoes

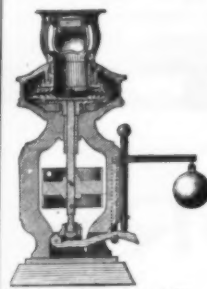


SAVES TIME, LABOR, POWER, MONEY.

When
ChangingChange
Point OnlyAlways
SharpNo Breakage
Quick Renewals
Long WearAll
Sizes

Send for Circular.

TAYLOR IRON & STEEL CO., Sole Manufacturers,
HIGH BRIDGE, NEW JERSEY.



Sectional view No. 2 Mill.

Bogardus Universal Eccentric Mill.

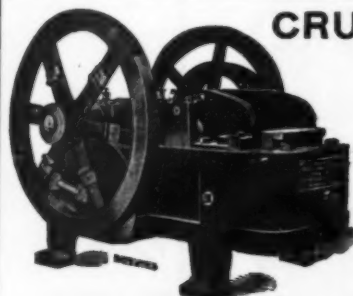
This mill has already attained the reputation of being the best mill in the world for general grinding. Will grind five times as much as any mill of same size. ECONOMICAL, DURABLE, SIMPLE. Any boy can attend same.

Catalogue and price list sent on application.

MANUFACTURED SOLELY BY

J. S. & G. F. SIMPSON,

28 Rodney Street, Brooklyn, N. Y.



ROLL JAW CRUSHER.

CRUSHES

Large Rock

to **4** inch.

Send for Cir.

STURTEVANT MILL CO., 116 Clayton St., BOSTON, MASS.

Complete Industrial Railways

EQUIPPED, PLANNED AND BUILT FOR

Factories, Plantations, Quarries, Mines, Contractors, Etc.

CARS OF EVERY DESCRIPTION
FOR EVERY PURPOSE.

CAR FOR FACTORIES,
FREIGHT, ETC.

Rails, Switches, Turntables, Etc., always in Stock.

Manufactured by ARTHUR KOPPEL, Manufacturer of Narrow Gauge Railway Materials.

Write for Catalogue No. 25.

(Dept. K.)

66-68 Broad Street, NEW YORK.

THE THEW AUTOMATIC SHOVEL COMPANY,

Write for Illustrated
Catalogue of
Shovels and Excavators.



LORAIN, OHIO.

SHOOK & FLETCHER,

Gen'l Southern Agents, BIRMINGHAM, ALA.

STEAM SHOVELS FOR DOCKS
AND RAILWAY TERMINALS.

Only one operator required.
Shovel works in complete circle.
Dipper moves horizontally.
Can be used as locomotive crane.

When In Need of LEAD PIPE OR SHEET LEAD

For Sulphuric Acid Chambers

Send your orders to The JAMES ROBERTSON MANUFACTURING CO., Baltimore, Md.

H. C. LARRABEE,

JNO. C. MURPHY.

CAROLINE IRON WORKS,

Pyrites Burners

Lump or
Fine.

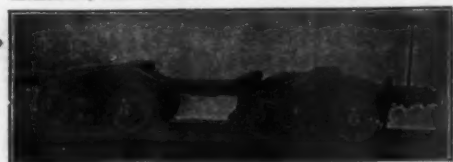
Eggs, Nitre Pots

Various
Sizes.

Acid Egg a Specialty.

Write for Prices.

Cor. Caroline and Lancaster Sts., Baltimore, Md.



PEACOCK'S IRON WORKS, SELMA, ALA.

Manufacturers of PLAIN AND AUTOMATIC SELF-OILING

TRAM CAR WHEELS, AXLES, CAR IRONS and CARS

OF ALL SIZES AND KINDS.

COAL AND ORE MINING CARS OF EVERY KIND.



Before You Buy CHAINS.

Trace, Wagon, Coil and Special.

THE INDIANA CHAIN WORKS,
JEFFERSONVILLE, IND.

FOUNDRY BARROWS

In manufacturing these barrows, the hard usage to which they are put, is kept prominently before us.



Substantially Braced.

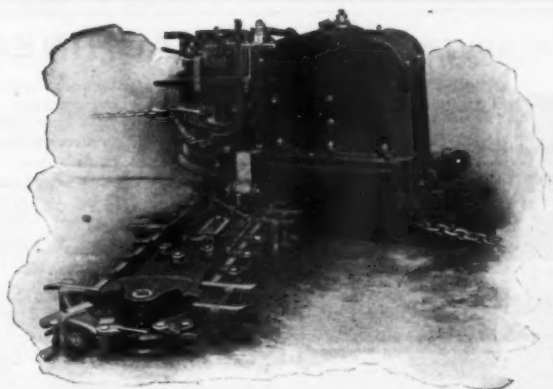
Metal Barrows of all sizes and for all purposes.

Mining Cars,

Coal or Coke Wagons.

Ask for Catalogue,

Jackson Mfg. Co. Harrisburg, Pa.



Sullivan Long Wall

Electric Coal Cutters.

Rapid.
Durable.

Economical.
Convenient.

Sullivan Machinery Co.

Claremont, N. H.
New York.
Pittsburg.

135 Adams St.
CHICAGO, ILL.

St. Louis.
Denver.
El Paso, Tex.

AIR COMPRESSORS

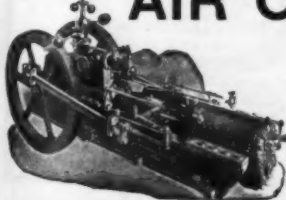
ALL STYLES—ALL SIZES

ROCK DRILLS

SIMPLEST AND MOST ECONOMICAL

McKIERNAN DRILL CO.

170 BROADWAY, NEW YORK.



AIR COMPRESSORS. FOR ALL PURPOSES
SEND FOR CATALOGUE.
AMERICAN AIR COMPRESSOR WORKS,
26 CORTLANDT ST., NEW YORK

THE GRIFFIN MILL

IS NOW USED BY OVER **50** OF THE LARGEST

Portland Cement Manufacturers in the world.

For the highest references and illustrated catalogue giving full description, address

BRADLEY PULVERIZER COMPANY,
92 State St., Boston, Mass.

THE FERNHOLTZ BRICK MACHINERY CO.

MANUFACTURERS OF

Dry Press Brick Machinery.

Dealers in Brick Yard Supplies.

Boyle Ave. & Old Manchester Road, St. Louis, Mo.

The Scientific Attrition Mill,

For Millers and Elevator Men.

WRITE US.

THE FOOS MFG. CO.,

SPRINGFIELD O.

Complete Plants
Equipped With



MODERN
FERTILIZER
MACHINERY

Walker & Elliott,
Wilmington, Del.

STEAM ROAD ROLLERS.



Kelly-Springfield Road Roller Co.
SPRINGFIELD, OHIO.

WE PULVERIZE

AND SEPARATE BY AIR.

THE ONLY MILLS IN THE WORLD

GUARANTEED DUSTLESS.

RAYMOND BROS. IMPACT PULVERIZER CO.

143 LAFLIN STREET, CHICAGO.

IMPROVED WASHERS Ore, Elevators, Conveyors, etc.
Phosphate. **McLANAHAN-STONE MACHINE CO.**
HOLLIDAYSBURG, PA.

ART METAL WORK
In Wire, Brass and Wrought Iron.
Bank and Office Railings
ELEVATOR ENCLOSURES



Wire Cloth, Coal and Ore Screens, Barbed and Plain Wire, Wire Nails and Staples.

Metal Work for Interior and Exterior Decorations
Write for Catalogue. A SPECIALTY,
N. E. Cor. Fourth & Elm Sts., St. Louis, Mo.

BUFFALO WIRE WORKS CO.
FORMERLY SCHEELER'S SONS
WIRE CLOTH & WIRE GOODS
BUFFALO, N. Y.

STEEL PLATE CONSTRUCTION.
The Girard Boiler & Mfg. Co.
GIRARD, OHIO.

Blast Furnaces, Stacks, Tanks, Riveted Pipe, Stand Pipes, Galvanizing Kettles, Ladles, Girders, Structural Work, etc. Write us.

PERFORATED METAL
IN SHEET
TIN, ZINC, COPPER,
BRASS AND STEEL

EDWIN B. STIMPSON & SON
31 SPRUCE STREET
NEW YORK

BRICK MACHINES.
Clay Grinding and Tempering Mills,
Brick Yard Supplies.

Complete Equipments—Hand or Power.
Interesting Catalogue upon request.

GEO. CARNELL,
1819-21-23 N. Germantown Ave., Cor. 5th,
PHILADELPHIA, PA.

Whatever Your Needs, We Can Supply Them.

PERFORATED METAL
FOR RICE MILLS, SUGAR WORKS,
PHOSPHATE MINES.

THE ROBT. AITCHISON PERFORATED METAL CO.
CONVENT ROAD, LONDON, E.C. 4, ENGLAND
303 305 D ARBURN ST. CHICAGO ILL.

Perforated Metals,
for all kinds of Screens—Brass, Iron, Steel, Tin,
Copper, Zinc—perforated as required. Perforated
Brass and Tin always in Stock.

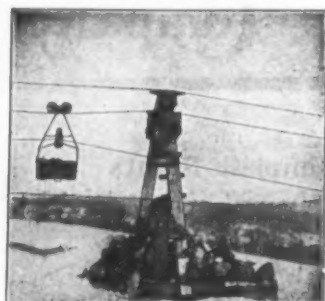
PROMPT SHIPMENTS GUARANTEED.

A. J. BECKLEY CO.
Works—GARWOOD, N. J.

Get Our Prices.

Chas. Mundt & Sons,
Manufacturers of Perforated Metals of every
description for all purposes

441 and 443 Pearl St., cor. William, NEW YORK.



Bleichert Tramway of Ludwig Mond, Victoria
Mines, Ontario, Canada.

Manufacturers, Engineers and Contractors and sole licensees in North America for the Bleichert System.
Also, Wire Rope Equipments for Cable-Hoist Conveyors, Surface and Underground Haulage, etc.

Illustrated book upon application.

NEW YORK OFFICE—Cooper, Hewitt & Co., 17 Burling Slip. CHICAGO OFFICE—1114 Monadnock Bldg.
PHILADELPHIA OFFICE—614 Betz Bldg.

THE
**Bleichert
Wire-Rope
Tramway,**

More in use than all others.

THE TRENTON IRON CO.,
TRENTON, N. J.

THE NEW JERSEY WIRE CLOTH CO.

For information about
WIRE LATHING,
With or without
Stiffening Ribs,

**Roebeling's System
of Fire-Proofing,**
ADDRESS

The Roebeling Construction Co.
121 Liberty St., NEW YORK.

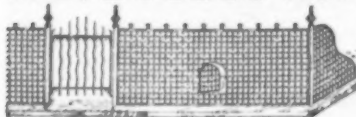
WIRE CLOTH
FOR ALL PURPOSES.

**POULTRY NETTING,
WOVEN WIRE FENCING.**

ROEBELING'S WIRE is used in all of the products of this Company.

TRENTON, N. J.

J. E. BOLLES Iron and Wire Works.



Bank Railings, Elevator Enclosures and Cars, Grills,
Electro Bronze Work, Fire Escapes, Iron Shutters,
Stable Fittings, Window Guards, etc.

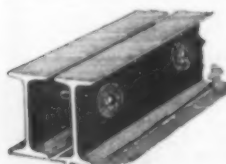
Send for Catalogue No. 20 M.
Mention line of business. Detroit, Mich.

CHESAPEAKE IRON WORKS,
Manufacturers of
Ornamental Iron Work.

336 to 342 North Street,

Baltimore, Md.

BEAMS,
CHANNELS,
ANGLES,
and
CAST IRON
COLUMNS.



Headquarters for
I BEAMS, GIRDERS, COLUMNS, SILLS,
WINDOW GUARDS, OFFICE RAILING,
IRON AND WIRE FENCES,
AND ALL
KINDS
OF
BUILDERS' IRON WORK
SEND FOR CATALOGUE. PROMPT SERVICE. LOW PRICES.
EUREKA SUPPLY CO., CHATTANOOGA, TENN., 8th and Pine Streets

HENDRICK MFG. CO.

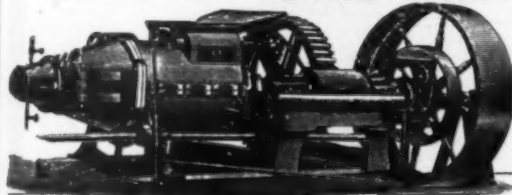
CARBONDALE, PA.



PERFORATED SHEET METALS

FOR SCREENING
COAL, COKE, ORE AND ROCK.
ALSO FOR
COTTON SEED OIL MILLS
AND
PHOSPHATE MINES.

'NEW SOUTH' BRICK MACHINERY.



Specially designed for working
Southern clays. Three
sizes with capacities from
to 60,000 per day. Hundreds
in daily use. 12 years' ex-
perience.

J. C. STEELE & SONS,
Statesville, N. C.

OHIO BRICK and TILE MACHINES Unequaled for BUILDING,
PAVING and FIRE BRICK

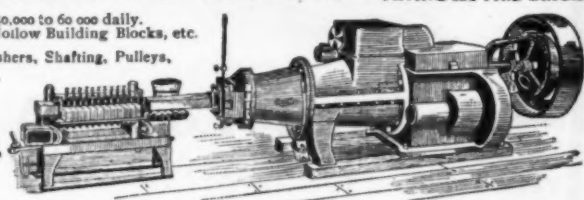
Six sizes. Capacity 40,000 to 60,000 daily.
Drain Tile, Hollow Building Blocks, etc.

Pug Mills, Clay Crushers, Shafting, Pulleys,
Belting, Castings.

Send for Catalogue.

E. M. FREESE & CO.

Gallion, Ohio, U.S.A.



**Wire
Rope.
Insulated
Wires.**

Send for Handsomely Illustrated
Catalogue.

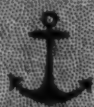
Hazard Mfg. Co.,
Wilkesbarre, Pa.

NEW YORK:
50 Dey Street.

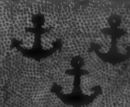
CHICAGO:
H. Channon Co.
24 Market St.



ROAD BUILDING MACHINERY
and supplies of every description
ACME ROAD MACH'Y CO., FRANKFORD, N. Y., U. S. A.



Anchor Brand Roofing.



Warren's Anchor Brand Natural Asphalt Roofing.

As Compared with Tin Roofing: First cost is not greater. Considering painting, cheaper. Lasts longer; will stand more severe conditions.

As Compared With Coal-Tar Roofing: Its oils will not volatilize, thus giving it strength, toughness, flexibility, and long life. It has been sold for twenty-five years, and applied to some of the largest and finest buildings in America. If interested, write.

W. H. RAPLEE, S. W. Representative, **Warren Chemical & Mfg. Co.,** 16 Battery Place, New York City.
P. O. Box 31, Shreveport, La.

Easton Foundry & Machine Co.

Main Office and Works, Easton, Pa.
New York Office, 36 E. 23rd St.

BEAMS, CHANNELS and ANGLES.

IMMEDIATE DELIVERY.

CUT TO LENGTH. WRITE FOR QUOTATIONS.

| Beams | Channels | Angles-Even Legs |
|---------------------|--------------------------|---------------------------|
| 6-in. 12½ lbs. | 6-in. 8 lbs. | (Continued) |
| 7-in. 15 " | 7-in. 9½ " | 4-in. x 4-in. x ½-in. |
| 8-in. 18 " | 8-in. 11½ " | 6-in. x 6-in. x ½-in. |
| 9-in. 21 " | 10-in. 15 " | 6-in. x 6-in. x ¾-in. |
| 10-in. 25 " | 12-in. 20½ " | |
| 11-in. 28 " | 15-in. 30 " | |
| 12-in. 31½ " | | |
| 13-in. 35 " | Angles-Even Legs | Angles-Uneven Legs |
| 14-in. 40 " | 2-in. x 2-in. x ¼-in. | 3-in. x 2½-in. x 5/16-in. |
| 15-in. 45 " | 2½-in. x 2½-in. x ¼-in. | 4-in. x 3-in. x 5/16-in. |
| 16-in. 50 " | 3-in. x 3-in. x ¼-in. | 4-in. x 3-in. x 7/16-in. |
| 17-in. 55 " | 3-in. x 3-in. x ½-in. | 5-in. x 3½-in. x ½-in. |
| 18-in. 60 " | 3½-in. x 3½-in. x ½-in. | 5-in. x 3½-in. x ¾-in. |
| 19-in. 65 " | 4-in. x 4-in. x 5/16-in. | 6-in. x 3½-in. x ½-in. |
| 20-in. 70 " | | 6-in. x 3½-in. x ¾-in. |
| 21-in. 75 " | | 6-in. x 4-in. x ½-in. |
| 22-in. 80 " | | 6-in. x 4-in. x ¾-in. |

All angles, channels and beams up to and including 15 in. x 59-lb. are carried in 60-ft. and 65-ft. bars; 18-in. 55-lb. beams in 39-ft., 33-ft. and 36-ft. bars; 20-in. 65-lb. beams in 35-ft., 33-ft. and 40-ft. bars; 24-in. 80-lb. beams in 40-ft., 45-ft. and 48-ft. bars.

CASTINGS OF EVERY DESCRIPTION AND UP TO 10 TONS

BRIDGES, BUILDINGS, ROOFS AND OTHER **Structural Steel**

BELMONT IRON WORKS,

PHILADELPHIA, PA.

STRUCTURAL & ORNAMENTAL WORK.

1000 TONS

BEAMS, CHANNELS & ANGLES, IN ALL SIZES.
FOR SALE FROM STOCK, PLAIN, PUNCHED & FRAMED.

GIRDERS, COLUMNS, ROOF TRUSSES,
BRIDGE RAILINGS & HOUSE RAILINGS.

ALL CLASSES OF ARCHITECTURAL WROUGHT & CAST IRON WORK.



Burrowes

Rustless SCREENS

Keep Out FLIES and MOSQUITOES

Made only to order. Guaranteed to fit. Best in the World. Reasonable in price. Estimates furnished. We pay freight.

The E. T. Burrowes Co.

Factories at Portland, Maine
Baltimore Office, 315 Equitable Bldg.
Burch & Hughes, Sales Agents

WIRE RAILING



AND
ORNAMENTAL WIRE WORKS
DUFUR & CO.

311 N HOWARD ST BALTIMORE
Wire Railing for Cemeteries, Lawns, Gardens,
Offices and Balconies; Window Guards, Tree
Guards, Wire Cloth, Sieves, Fenders, Cages, Sand
and Coal Screens, Iron Bedsteads, Chairs, etc.

The Fred. J. Meyers Mfg. Co.

HAMILTON, O.

Manufacturer of Office and Bank Railings, Win-
dow Guards of every description, Elevator Cabs
and enclosures, Stable Fittings and Crestings,
Ticket and Conductors' Patches, Wire Cloth for
Coal and Ore Mines.

Send for Catalogue.

CARS—WHEELS—AXLES

CARS—Coal Mining—Ore Cars—Contractors' Dump Cars—Lumber Trucks, etc.

WHEELS—(8" to 24" diameter) SELF-OILING Capped—Side Pockets—Plain Spoked—Plate.

AXLES—Machinery Steel—Square or Round—Any gauge.

NOTE: Our wheels will outlast any you have ever used. We use charcoal iron mixed on a scientific chemical basis. Our methods and wheels are ahead of the times. A sample will convince you. Wheels have deep chill and tough hub for longest wear. We do not THINK, we KNOW we can please you.

PRICES—BLUE PRINTS—CUTS—ESTIMATE BLANKS
ON APPLICATION.

SANFORD-DAY IRON WORKS,
KNOXVILLE, TENN.

Mining Equipment, Drums, Sheaves, Rods, Pulleys, Cast Frogs and Turn-Outs, Grate Bars, Grates, etc.

ASTEROID The Permanent ROOFING.

ALL BUILDINGS
SCOTT & CO. MANFRS
EST. 1872.
CINCINNATI, O.

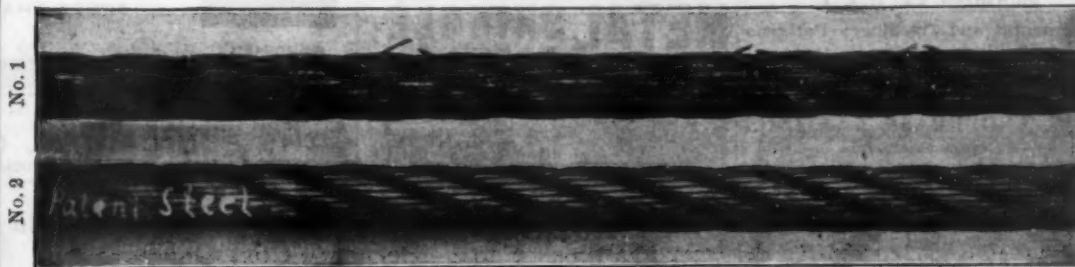


"YDONTU"

Try Our

"PATENT STEEL"
ROPE.

IT'S THE
BEST
Now In
The Market



No. 1—Photograph of ordinary steel rope, after 4½ years' wear, showing broken wires.

No. 2—Photograph of our celebrated **PATENT STEEL ROPE** after 6 years' wear in the same place, having done double the amount of work.

BRODERICK & BASCOM ROPE CO.,
SAINT LOUIS, MISSOURI.

GO TO SLEEP
and let fires worry the man who hasn't
Flintkote Roofing
on his buildings. This product pleases the eye
and is VERY DURABLE.

A POST CARD BRINGS A SAMPLE.

J. A. & W. BIRD & COMPANY "The Flintkote Folks"
BOSTON, MASS.

THE STAR VENTILATOR
Storm-Proof. Effective.
For Ventilating Factories of all kinds, Foundries, Machine
Shops, Power Houses, &c.

Merchant's High-Grade Roofing Plates.
Made by the Palm Oil Process.
No Wasters. Evenly Coated.

The Brands are: "Merchant's Old Method," "Merchant's Roofing,"
"American Old Style," "Camaret," "Alaska." Each sheet stamped.
Send for booklet, "How Roofing Tin (good and bad) is made."

Philadelphia New York **MERCHANT & CO., Inc.** Chicago Brooklyn
Sole Manufacturers.

Union Bond Steel Wall Ties
All Kinds—Galvanized
FOR
Face Brick, Veneering, Terra Cotta,
Hollow Walls, etc.

UNION BRICK BOND COMPANY, Exclusive Mfrs., PITTSBURG, PA.

SLATE ROOFS LOOK THE BEST.
LAST THE LONGEST.
Write for Free Book
and lowest prices.

JOHN GALT & SONS,
253 Broadway, - - NEW YORK.
95 Washington St., CHICAGO.

NAILS and CEMENT. TOOLS and SLATE DRESSERS

MINERAL WOOL
FIRE, SOUND AND VERMIN PROOF INSULATOR.
Samples and Circulars Free.

U. S. MINERAL WOOL CO., 143 Liberty St., NEW YORK.

For PAINTING MILLS, FACTORIES AND WORKSHOPS
USE ONLY PAINTS BASED ON
ZINC WHITE.

A pamphlet, "The Paint Question," will tell you about it. Send TO US for one. The New Jersey Zinc Co., Empire Bldg., 11 Bowry, New York.

Patterns in Wood and Metal.
THE Richmond Pattern Works
305, 307, 309, 311, 313 North 18th St.
RICHMOND, VA., U. S. A.

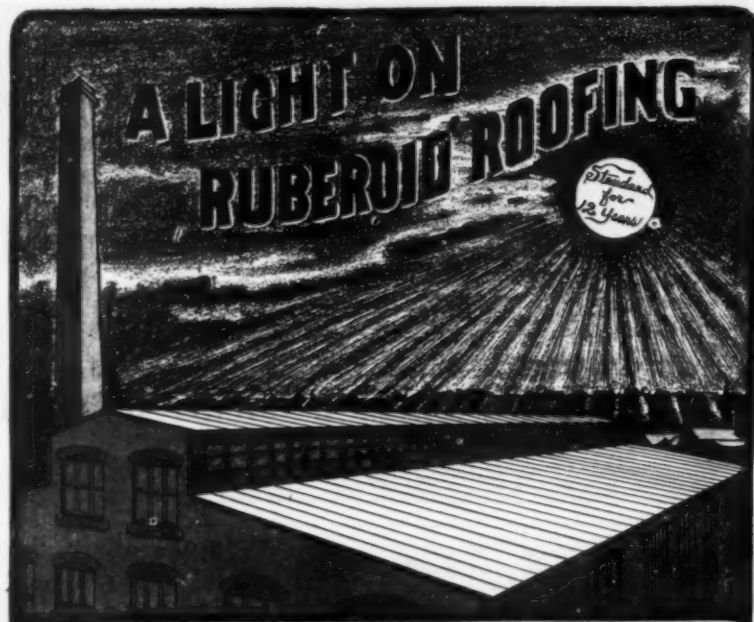
Ornamental and Machinery Patterns
of all kinds; Marine Patterns
a Specialty.
Practical Construction Guaranteed.
IRON AND BRASS CASTINGS
OF EVERY DESCRIPTION.

ARROW BRAND ASPHALT READY ROOFING.
Comes in rolls ready coated with gravel. Easy to lay. Contains no tar. No painting required.

Asphalt Ready Roofing Co., Sole Mfrs., 136 Water St., N. Y.
Notice the smooth lap which comes on every roll and insures tight joints.

METAL SHINGLE ROOFING Best for house or barn. Fire-proof. Easily laid. Cheaper than slate or wood. Prices, catalogue and testimonials FREE.

MONTESS SHINGLE CO., Camden, N. J.



IN THE LIGHT OF A TWELVE YEARS' RECORD.

A large manufacturing company of Fremont, Ohio, used some of the first lots of RUBEROID ROOFING made, twelve years ago. A large foundry company in Jersey City, New Jersey, also used some at about the same time. We have letters from both of them, stating that the ROOFING is to-day still giving entirely satisfactory service on their buildings under severe conditions of intense heat, excessive fumes, unequal and varying temperatures which have constantly prevailed during those twelve years. These letters must convince you. We have testimonials from numerous other prominent concerns who have used our ROOFING under trying conditions for equally long periods.

Is it not significant that after twelve years we can refer with pride to the first RUBEROID ROOFS laid? It is certainly a record unique among prepared roofings. We stand upon that record. We know that RUBEROID is the most durable ROOFING on the market, and can prove it. What it has done for others it will do for you. If you believe in practical demonstrations, our proofs will convince you. May we send you booklet and samples? We have agents in your locality who can fill orders promptly. Let us hear from you.

THE STANDARD PAINT COMPANY,

EXCLUSIVE MANUFACTURERS,
100 WILLIAM STREET, DEPARTMENT No. 5. NEW YORK, N. Y.



Red, Brown,
Buff and Black
**MORTAR
COLORS**



The Strongest and Most Economical in the Market.

One-half the amount of our Mortar Colors will do the work of any other and they are unsurpassed in Strength, Fineness, and Body.
Write for Samples and Quotations.

CHATTANOOGA PAINT CO.
CHATTANOOGA, TENN.

We manufacture a superior grade of
Red Oxide of Iron Paint for Railroad Cars, Bridges, Barns, Fences, Etc.

SAGENDORPH'S METAL SHINGLE
PAINTED STEEL, TIN
OR GALVANIZED
3 Sizes—7 x 10, 10 x 14, and 14 x 20 inches.
SEE THAT LOCK JOINT



THE PENN METAL CEILING & ROOFING CO.
PHILADELPHIA and BOSTON.



From Margam Forge, Glamorganshire, South Wales, to
Martin's Ferry, Belmont Co., Ohio.

NOTE THE COINCIDENCE:

The most favored brand of roofing tin, the **MF** which originated at Margam Forge in South Wales about sixty years ago, is now being produced by the American Tin Plate Co. in its works at Martin's Ferry, Ohio.
At the Martin's Ferry Works the **MF** old style process has been combined with the "New Method" of finishing Terne Plates. The result of this happy combination has been the U. S. Eagle N. M.
Ask W. C. Cronmeyer, Agent, 1211 Carnegie Building, Pittsburg, Pa., for our new booklet which teems with useful information.



AMERICAN TIN PLATE CO., Battery Park Bldg., New York.

MAGNITE

COLD WATER PAINT
Gives a Wonderful Firm Finish - The Best for Interior Work in Mills-Factories Etc. Never Discolors or Flakes off - Send for Our Color Book
J. A. & W. BIRD & Co. - 10 Weld St. - BOSTON

AQUALITE

THE LATEST AND BEST
COLD WATER PAINT

For Outside and Inside Work.
 Fire-Proof and Weather-Proof.

All the advantages of others, many features exclusively its own.

Columbia Refining Co.
 32 BROADWAY, NEW YORK.

SKYLIGHTS, HOT AIR VENT, ROOFING OF ALL KINDS,
 CORNICES, FIRE-PROOF WINDOWS,
 EXHAUST AND BLOW PIPE.

W. C. WULFF & CO.,

LOUISVILLE, KY.

If you allow friendship
 to influence your purchase,
 you may not patronize us,
 because we are not and cannot be
 bosom friends of everybody.

IMPARTIAL BUYERS

Select Our

NATURAL ASPHALT ROOFING

For Its Genuine Merit.

STOWELL MFG. CO.

Jersey City, N. J.

Nature understands the necessity of
 good ventilation in the human building
 which she builds; hence she uses the nose.
 Builders are aware of the same necessity;
 hence they use the **Dixie Ventilator**.
 Both are looking for the best.



BROKEN SECTION,
 PAT. SEPT. 9, 1901.

Dowman-Dozier Mfg. Co.
 ATLANTA, GA.

American Roofing Company,
 MOBILE, ALA.

GRAVEL ROOFS.

THE
**EASTERN GRANITE
 ROOFING CO.**
 IRVING BUILDING
 NEW YORK.

THE ENORMOUS INCREASE
 SHOWN HERE PROVES THAT
PERFECTED GRANITE ROOFING
 IS THE ROOFING TO USE.

THE MOST PROMINENT
 COAL OPERATIONS AND RAILROADS
 TESTIFY TO THIS BY ADOPTING IT
 AS THEIR
STANDARD.

Write for testimonials,
 photo pamphlet and samples.
 BOSTON, MASS.

**CORTRIGHT
 METAL ROOFS**
 LAST
 INDEFINITELY

Proof is in our little booklet,
 "CONCERNING THAT ROOF."
Cortright Metal Roofing Co.,
 Philadelphia and Chicago.

NATIONAL ROOFING & SUPPLY CO.

LOUISVILLE, KY.

Gravel Roofs.
 Cement and Asphalt Pavers.
 Building Papers.
 Two and Three-Ply Ready Roofing.

Prepared Gravel and Slag Roofing

As prepared and applied by our specifications, will give you a perfect roof covering for all your buildings. Compare our roofings with others.

Samples and Catalog for the asking.
Armitage Mfg. Co., Richmond, Va.

SPECIALTIES—2 and 3-ply Roofing, Insulating, Building and Sheathing Papers, Asphaltum, Pitch, Roof Paints, etc.

CAREY'S

Magnesia
 Flexible
 Cement

ROOFING

An Example of the
 Highest Skill in Roof
 Construction.

For Factories, Mills,
 Elevators, Foundries,
 Dry Kilns, Boiler
 Rooms, Warehouses,
 Business Blocks,
 Dwellings, Etc.

FLAT OR
 STEEP SURFACES

The Best For
 Permanent Buildings.
 In Use Everywhere.

Ask For Sample.

—THE—

**PHILIP CAREY
 MFG. CO.**

SOLE MANUFACTURERS,

Lockland, - Ohio.

29 Branches

See our Covering Advt. on Page 28

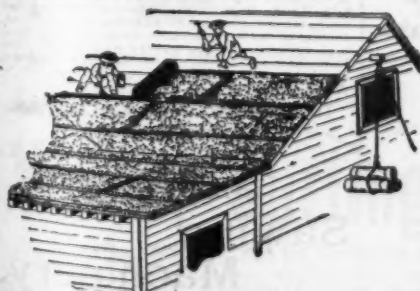


RAW HIDE
 WATER-PROOF
 PAPER.

HAVE YOU SEEN GARRETT'S No. 44?

The best oiled sheathing made; will not dry out and become brittle; just the thing for lining under tin roofs that are subject to moisture.

C. S. GARRETT & SON CO., Paper Makers,
 20 and 22 S. Marshall Street, PHILADELPHIA.

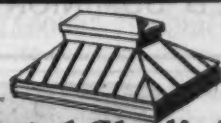


SEND FOR BOOKLET.

WHITE ROCK STONE-SURFACED ROOFING

is moderate in price, easily laid, presentable and durable. Our chief aim is quality, and the price is governed accordingly. Any handy man can lay it. Suitable for most any shaped roof. Proof against storms and corroding fumes; consequently, naturally appropriate for **CHEMICAL FACTORIES, BOILER HOUSES and POWER PLANTS.**

BUCHANAN-FOSTER CO., 724 Drexel Bldg., PHILADELPHIA, PA.



Metal Skylights

that positively will not leak, drip, sweat or burn; self-ventilating. All about them in our Illustrated Catalogue—free for the asking. Shall we mail it to you?

E. VAN NOORDEN CO.

660 Massachusetts Ave.
 BOSTON, MASS.

ALABAMA CONSOLIDATED COAL & IRON CO.

BIRMINGHAM, ALA.

Manufacturers of the Celebrated Brands of

FOUNDRY IRON:

"Clifton" and "Etowah"

Also Miners and Shippers of HIGH-GRADE STEAM COAL, and Makers of the Well Known

"STANDARD" FOUNDRY COKE.

Selling Agents for the North and West: **MATTHEW ADDY & CO.**

CINCINNATI, CHICAGO, ST. LOUIS
PITTSBURGH, PHILADELPHIA, NEW YORK.

MOBILE COAL CO., Agents for Coal and Coke in the Mobile Territory.

Jewett, Bigelow & Brooks,

MINERS AND SHIPPERS OF

**Iroquois Splint
and Thin Vein
Pocahontas Coal**

The Two Most Powerful Steam Coals Produced.

MAIN OFFICE, DETROIT, MICH.

Southern Office, Marytown, W. Va.

Eastern Office, Roanoke, Va.

W. K. NIVER COAL CO.

Miners and Shippers of the Celebrated

Pen Mar Big Vein Cumberland and Paint Creek Kanawha Splint, Steam and Gas COALS.

Unexcelled for Steam and Smithing Purposes,

General Offices, Continental Trust Bldg., Baltimore, Md.

BRANCH OFFICES:

625 Marquette Bldg., CHICAGO. 1021 Union Trust Bldg., CINCINNATI, O.
101 Milk St., Boston, Mass. 200 E. Genesee St., Syracuse, N. Y. Altoona, Pa.

Shipping Wharves: BALTIMORE, NEWPORT NEWS, PHILADELPHIA AND STATEN ISLAND.

Burroughs & Kramer, Durham, N. C.

Selling Agents for North and South Carolina.

Pocahontas Coal**SMOKELESS, SEMI-BITUMINOUS.**

Is the Standard Steam Fuel for the World.

CASTNER, CURRAN & BULLITT, Sole Agents, PHILADELPHIA.

BRANCH OFFICES:

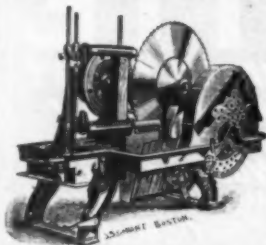
1 Broadway, New York. 70 Kilby Street, Boston, Mass. Citizens Bank Bldg., Norfolk, Va.
Neave Building, Cincinnati, O. Terry Building, Roanoke, Va. Old Colony Building, Chicago, Ill.
4 Fenchurch Avenue, London, England.

OLD DOMINION HORSE SHOES.Cut Nails of Superior Quality of Iron and Steel.
Bolts, Refined Bar Iron.

GRANITE CRUSHED TO ORDER FOR CONCRETE PURPOSES.

OLD DOMINION IRON & NAIL WORKS CO.

RICHMOND, VA.

INCORPORATED
1884**KENSEE**
STANDS FOR ALL THAT IS BEST IN BLUE-GEN AND JELICO COALS.ADDRESS MAIN JELICO MT. COAL CO. KENSEE, KY.
(TELEGRAPH JELICO, TENN.)**The Chase Shingle Machine****BUILT** entirely of iron and steel.
16, 18 and 40 cuts per minute,
with saw running 1500 revolutions.
Carriage automatically stops at the
end of the stroke in position for
another block.This machine will cut shingles, heading or box boards from
8 to 30 inches long and from 4 to 15 inches wide, according
to size of saw and length of block.

SOLD BY

MADE BY
Chase Turbine Mfg. Co.
ORANGE, MASS.**STRATTON & BRAGG CO.**
PETERSBURG, VA.**DAVIS COAL AND COKE CO.**

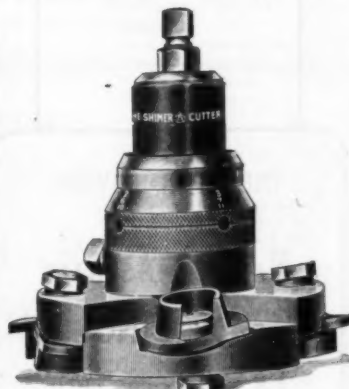
MINERS AND SHIPPERS

DAVIS LOCOMOTIVE, STEAM AND SMITHING COALS

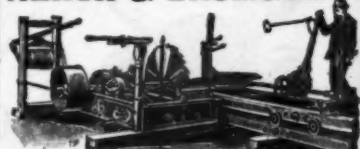
Sole Agent for **Big Vein Cumberland Coal.**DAVIS COKE FOR ORE SMELTERS, FOUNDRIES,
AND FAMILY USE.

Shipments to all points accessible to rail or water.

BALTIMORE. PHILADELPHIA. NEW YORK. BOSTON.

**The... Exhibition Department
BOURSE**Offers you an opportunity to
extend your business.For full particulars address
Exhibition Department, THE BOURSE, Philadelphia.**Wood-Working
Machinery**
FOR ALL PURPOSES.**H. B. Smith Mach. Co.**
Smithville, N. J.BRANCHES: NEW YORK,
CHICAGO,
BOSTON.

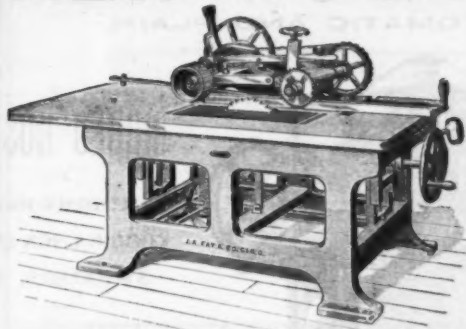
The Great Success of

The Shimer Cutter Headsis due to their superiority, and the
ease with which they are adapted
to all kinds of work. Send for
particulars. Address**Samuel J. Shimer & Sons,**
MILTON, PENNSYLVANIA.**HENCH & DROMGOLD'S****SAWMILL AND ENGINES**A wonderful improvement in Friction Feeds and
Gig-Back. Back motion of Carriage 3 times as fast
as any other in the market. Friction Clutch Feed,
causing all the feed gearing to stand still while tack-
ling; great saving in power and wear. Calc-
lators and price free. Also Spring Harrows,
Cultivators, Corn Planters, Shellers, etc.
Mention this paper.**The Hench & Dromgold Co., Mfrs.**
YORK, PA.**BEACH'S
Sawing
Machinery.**

H. W. BEACH, MONTROSE, PA.

A. C. Danner, Presl. J. C. Strong, Sec'y & Treas.
MOBILE COAL COMPANY,
COAL
AT WHOLESALE AND RETAIL.
CARGO & BUNKER COAL
furnished promptly.
Main Office, 67 St. Francis St., **MOBILE, ALA.**

NEW WOOD WORKING MACHINERY



No. 2½ Large Self-Feed Rip Saw.
Fine new machine for all wood working shops.

The attention of the lumberman and wood worker is invited to our line of machinery for working wood. We make it for all purposes; furnish it in single tools or complete outfits, smallest to largest sizes.

We are the largest makers of this machinery in the world, and our immense facilities and resources enable us to furnish whatever may be wanted without loss of time, or endless correspondence back and forth. Promptness is one of our cornerstones.

As to quality of our products, the fact that we are without superiors implies that it is of the very best. Another reason: highest honors wherever we have exhibited: "Grand Prix" and Decoration Legion of Honor, Paris, 1900. Another reason: testimonial letters from users. Send for copies and see what they think of our machines.

Free: new catalogue, sander book, band saw pamphlet. All new, fully illustrated, and invaluable to progressive wood workers.

J. A. FAY & EGAN CO.

270-290 W. Front Street,

CINCINNATI, OHIO.



Improved Double Circular Revolving Saw.
Works wood in nearly every manner, and is indispensable in pattern and wood shops.

Notice This, Please!

Our Rotary Excelsior Machine makes a straight cut 16 inches long, 6 inches wide and of any thickness; the strands may be cut any width, 1-60 to 1-100 of an inch, thicker or thinner; has a capacity of 400 lbs. per hour; is simple, durable, strong and sure.

The American Excelsior and Machine Co., Baltimore, Maryland.

Atkins "Improved Hoosier Extension" Hack Saw

The time you lose depends much on the tools you use. This Hack Saw Frame, quickly adjustable to different length blades, is a time-saver. Our Hack Saw Booklet will tell you why. Write for it.



**SAWS
of All Kinds**

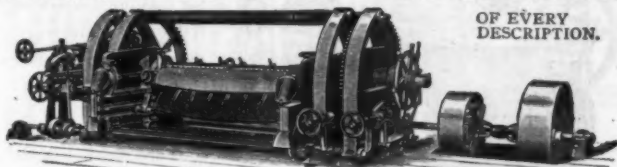
E. C. ATKINS & CO., Inc.

Leading Saw and Tool Manufacturers,
INDIANAPOLIS, IND.

BRANCHES:—Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.;
Portland, Ore.; No. 64 Reade St. N. Y. City; Chicago, Ill.; Toronto, Can.; Seattle, Wash.

We are Positively Headquarters for Strictly High Grade VENEER CUTTING MACHINERY

OF EVERY
DESCRIPTION.



YOU WANT THE BEST. WE HAVE IT.

THE COE MFG. CO., Painesville, Ohio, U. S. A.

ESTABLISHED 1852.



OBER MFG. CO.

CHAGRIN FALLS, OHIO, U. S. A.

Manufacturers of

**PATENT HANDLE,
SPOKE and VARIETY TURNING LATHES,
SANDERS, ETC.**

Lathes for Turning Axe, Adze, Pick, Sledge,
Hammer, Hatchet, Auger, File, Knife, Chisel,
Fork, Hoe, Rake, Broom, Ice Hook and Mop
Handles, Pike Poles, Whiffletrees, Yokes,
Spokes, Porch Spindles, Table Legs, Tent
Stakes, Ball Bats, Mallets, Gun Stocks, etc.

Boring Machines, Automatic Sanders,
Chucking Machines, Shapers.

E. E. TITUS, Founder and Machinist,

Petersburg, Va.

MANUFACTURER OF LATEST IMPROVED

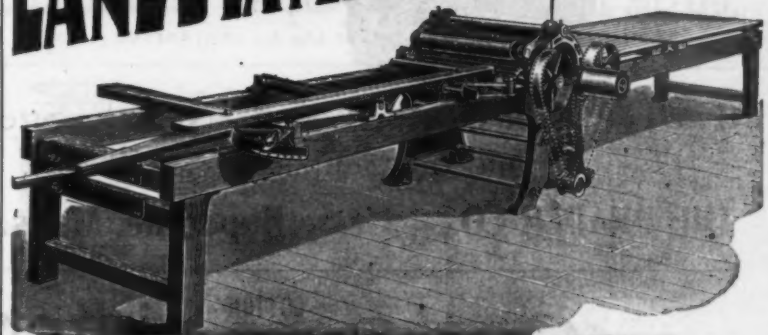
Veneer Cutting Machines,

With Impression Rolls for BASKETS, ORANGE BOXES, ETC., ETC.

Butter Dish, Berry Box, Fruit Basket, Orange Box, California Grape
Basket and Truck-Barrel Machinery a Specialty.

CONTRACTS TAKEN FOR COMPLETE OUTFITS.

LANE'S LATEST GANG EDGER 14 INCH SAWS



Highest Award, Gold Medal, at the S. C., Interstate & W. I. Exposition.

PAR EXCELLENCE AT THE PRICE.

\$137.45 with 2 saws, 1 movable; \$157.75 with 3 saws, 2 movable. Terms Cash. F. O. B. Montpelier, Vt. Will edge straight. Front roll raised and feed stopped from operator's position. Saws quickly changed. Front and rear tables easily removed for transportation.

We also manufacture Saw Mills, Set Works, Dogging Devices, etc., Water Wheels, Log Jackers, Canters and Niggers, Drag, Swing and Friction Feed Cutting-Off Saws, Live and Dead Rolls, Edgers, Trimmers, Cutting Off Tables, Lath, Shingle and Clapboard Machines. Planers and Matchers, Transmission Machinery and the Anderson Patent Traveling Cranes.

Circulars and Prices on Application.

Lane Manufacturing Company,
MONTPELIER, VERMONT, U. S. A.



FARQUHAR Portable Saw Mills

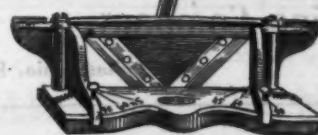
with Engines and Boilers Complete.

Illustrated catalog of farm machinery and implements, free. Made in seven sizes, friction feed, cable lightning gis, patent chain set works and improved dogs. **AJAX CENTER CRANK ENGINES** are constructed with special reference to the peculiar work required of them. This combination of engine and mill makes the best sawmill outfit on earth.

**AJAX
Center Crank
ENGINE**

**A. B. Farquhar Co., Ltd.
York, Pa.**

Wood-Workers' Bench Trimmers



Saves time—

A Single motion cuts a Saratoga chip or a thick one with perfect accuracy. Pattern-makers, Picture Frame and Cabinet makers can't afford to be without one on each work bench.

Only \$15.00 Each, while they last. Cash with order.

Carlin Machinery Supply Co.

Leach and Sandusky Sts., ALLEGHENY, PA.

DE LOACH MILL MFG. CO.

Manufacturers of

High-Grade Mill Machinery

ATLANTA, GA., and NEW YORK, N. Y.

Chattanooga Machinery Co.

Chattanooga, Tenn.

Manufacturers of

Saw Mill and Wood-Working Machinery.
Insulator Pin, Bracket and Cross-Arm Machinery.

Plow Handle MACHINERY.

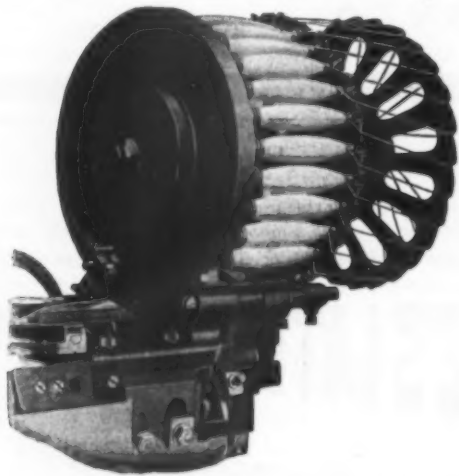
Write for Circular and Prices.

B. M. ROOT, YORK, PA.

LOWELL MACHINE SHOP,
LOWELL, MASS.
Cotton Machinery

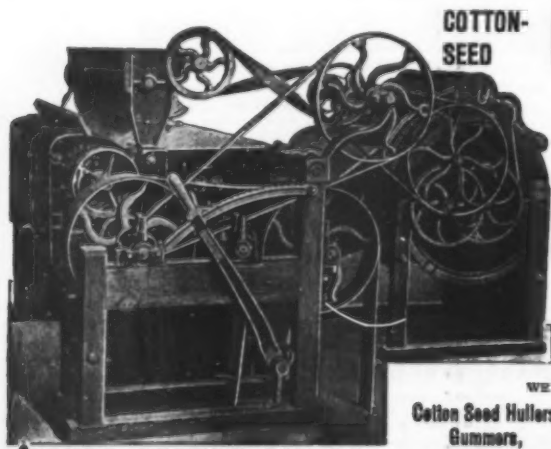
We Manufacture Everything Required
for the Complete Equipment of Cotton Mills.
Plans and Estimates Furnished on Application. Correspondence Solicited.

A NEW HOPPER
For the New Century.



The Hopper makes the Loom. Note the Size
and the Simplicity.

THE DRAPER CO., Hopedale, Mass.



CARVER COTTON GIN CO.

COTTON-
SEED

Linters

For 1903.
Patent Automatic
Feeder.
Adjustable
Seed Board.
Adjustable
Friction Drive
for Float.
New Method Drive.
Patent Iron Cylin-
der.
Whole Saw Wood.
Whole Saw Iron Cylinder.

WE ALSO MAKE
Cotton Seed Hullers, Saw Filing Machines,
Gummers, Cotton Gins.
East Bridgewater, Mass., U. S. A.

The Latest
and
Best.
*Looms, Harness Motions and Dob-
bles, Beaming, Spooling, Winding,
Dyeing and Sizing Machinery,
Power Transmitting Machinery,
Freight Elevators.*

Fairmount Machine Company,

Twenty-Second and Wood Streets,

Philadelphia, Pa.

CARDS.
DRAWING.

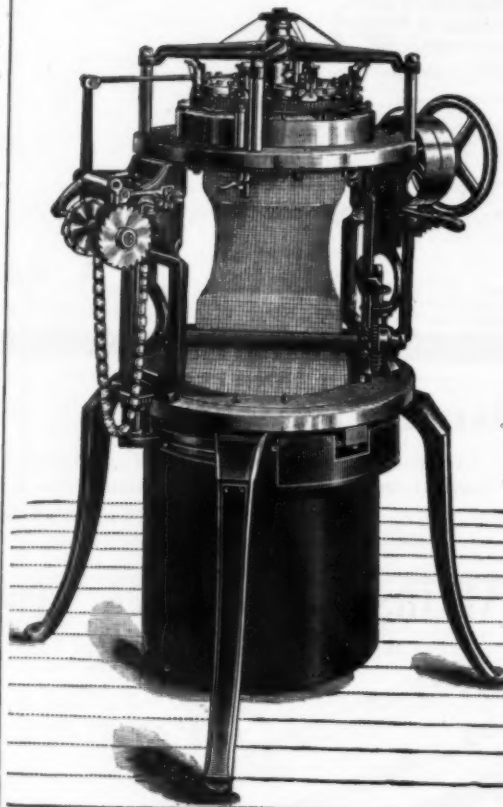
SPINNING
FRAMES.



COMBERS.
LAP MACHINES.

MULES.
LOOMS.

McMICHAEL & WILDMAN MFG. CO.
Rib Knitting Machinery
AUTOMATIC AND PLAIN.

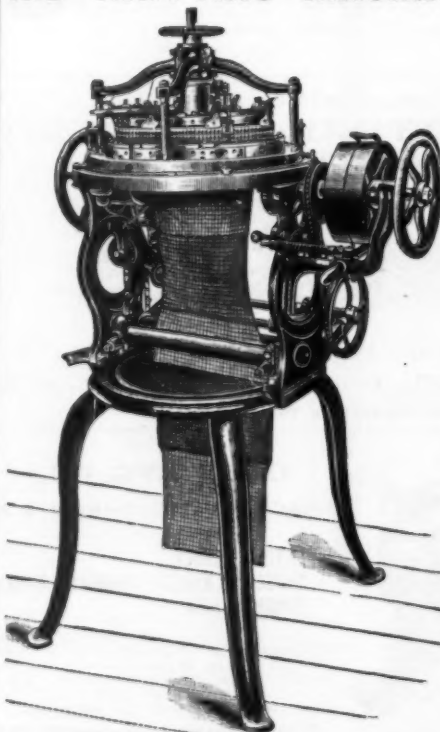


FOR ALL CLASSES
OF
RIBBED HOSIERY
AND
UNDERWEAR,
COMBINATION SUITS,
SWEATERS, Etc.
ESTABLISHED REP-
UTATION FOR
Largest Production,
Best
Quality Fabric,
Durability,
Economy of Opera-
tion.

Full particulars, de-
scription and samples
furnished upon appli-
cation to the

**McMichael & Wildman
Mfg. Co.,**
NORRISTOWN, PENNA.

SCOTT & WILLIAMS,
BUILDERS OF
RIB KNITTING MACHINERY For UNDERWEAR
and HOSIERY.



THE illustration shows our
IMPROVED HIGH SPEED
SINGLE LEVER AUTOMATIC
RIBBED UNDERWEAR MACHINE,
for making Ladies' and Gents'
Ribbed Underwear, Union
Suits, etc., Plain and Shaped.

Plain, Single Lever or with
Welt, Slack Course and Au-
tomatic Slackening Device
for Welt.

Improved Measuring Device,
by actual length knit.

Sizes, 8 to 24 inches inclusive,
varying by one inch.

Number of Feeds, 4 to 12, ac-
cording to style and diameter
of machine.

Solid Forged Steel Cylinders,
specially hardened, or with
patent inserted walls for fine
fabric.

Special Machinery for Sweat-
ers, etc.

WE BUILD

LOOPERS, RIBBERS and other MACHINERY FOR KNITTING MILLS.

As well as a complete line of full Automatic and $\frac{1}{2}$ Automatic Seamless Hosiery Machinery.
Full particulars, samples and special catalogues on application.

2079 E. Cumberland Street,

Philadelphia, Pa., U. S. A.

KILBURN-LINCOLN & CO., FALL RIVER, MASS
LOOMS FOR PLAIN AND FANCY WEAVING.

The Kilburn-Lincoln High-Speed Loom is the Result of over fifty years' experience in Loom Building.

LATCH NEEDLES

For All Makes of Machines.
Mayo Knitting Machine & Needle Co., Franklin Falls, N. H.

Our Complete Stock of
Everything Necessary in a Cotton or
Woolen Mill
enables us to supply your wants promptly
We solicit your patronage
AMERICAN SUPPLY CO. PROVIDENCE, R. I.

Cottonseed Oil Machinery.

(Not in any Combination or Trust.)

Modern Ginning Systems.

Write for Catalogue.

E. Van Winkle Gin & Machine Works,

Atlanta, Georgia, U. S. A.

Local Oil Mills and Ginneries Combined.

OIL MILL MACHINERY

Our specialties are Seed Cleaners, Rolls, Hullers, Crushing Rolls,
Cookers, Formers, Presses and Reboxing other makes of Presses.

SOUTHERN ENGINEERING CO., So. Eastern Agts., Sumter, S. C.
STUART W. CRAMER, Charlotte, N. C., is Southern Agent for our KNUCKLE JOINT CLOTH
BALING PRESSES.

G. H. BUSHNELL PRESS CO., Thompsonville, Conn., U. S. A.

Cotton-Seed Oil Mills.

WE are building the Latest Improved Machinery
for making Cotton and Linseed Oil of any
capacity from the Plantation Mill of 5 tons per
day upward. Our Mills have all the Latest
Improvements in Machinery and produce the
very best results. Also

HYDRAULIC COTTON PRESSES
AND HYDRAULIC PUMPS,
Either Steam or Power.

Full Information Gladly Furnished.

THE CARDWELL MACHINE COMPANY, Richmond, Va.

A. H. WASHBURN,

SOUTHERN AGENT

SACO & PETTEE MACHINE SHOPS

Everything needed for the Complete Equipment of COTTON MILLS to Manufacture
Yarns and Woven Fabrics of all Kinds,
CHARLOTTE, NORTH CAROLINA.

Whitinsville Spinning Ring Co.

SPINNING AND TWISTER
RINGS.

Whitinsville, Mass.

SECOND-HAND
HYDRAULIC MACHINERY

FOR

Cotton Seed Oil Mills.

Address "AMERICAN,"
1505 Manhattan Bldg., Chicago

NYE & TREDICK CO.
Circular Rib Knitting Machinery

For Underwear, Combination Suits, etc. Men's
Underwear, Sweaters and Hosiery.
406 Arch Street, PHILADELPHIA, PA.

SHERWOOD BOBBIN & MFG. CO.
Greensboro, N. C.

MANUFACTURERS OF

Speeder, Slubber, Inter-
mediate and Twister Bob-
bins, Skewers, Spools,
Spool Skewers and
Clearer Rolls.

Stencils, Checks,
Brass and Rubber Stamps,
and Stock Certificates

Manufactured by

JOHN G. HULLETT & CO.
124 S. Howard St., BALTIMORE, MD.

WRITE FOR PRICES.

SAVOGRAN KEEPS FLOORS AND SURFACES CLEAN
Highest Awards. INDIA ALKALI WORKS, 28-37 India Wharf, BOSTON. "26 years at it."

THE D. A.
TOMPKINS
CHARLOTTE, N. C. — COMPANY
COTTON MILLS

W. H. BIGELOW, Agent,
Tempered and Side Ground Card Clothing.
Tops Reclothed. Lickerins Rewound.

12 WEST 4th STREET, CHARLOTTE, N. C.

LONG DISTANCE PHONE.

REGULAR SIZES OF CLOTHING ALWAYS IN STOCK.

O. A. ROBBINS,
ENGINEER.
Machinery & Equipment of Cotton Mills.

OFFICE: Cor. 4th and Tryon Sts., CHARLOTTE, N. C.



Save Your Factory From Fire.

Insurance may be able to build another factory for you but it
won't save you for the loss of time. 60% of all fires in large cities
are put out with Chemical Extinguishers before the fire gains
headway. Be ready "on the spot" for any fire with

Badger's Fire Extinguisher.

Strong, Simple, Always Ready. Throws a stream 50 feet. A
child can use it. Send postal card for full particulars. Used by
the United States Government.

HUNDREDS OF MILLS,

the Boston & Maine, Seaboard Air Line, Boston Elevated and
other railroads.

Badger Fire Extinguisher Co., Dept. A, 32 Portland St.
BOSTON, MASS.

Cottonseed Oil Machinery.
Tobacco Cutting Machinery.

Brass Goods FOR ENGINE BUILDERS, STEAM, WATER AND GAS FITTERS.
Write for Catalogue.

BUCKEYE IRON & BRASS WORKS,
DAYTON, OHIO, U. S. A.



YOU WANT
THAT TONAWANDA
MERRY-GO-ROUND
BIGGEST MONEY MAKER
ON EARTH.

HERSCHELL, SPILLMAN & CO.
103-109 SWEENEY STREET,
North Tonawanda, NEW YORK.

For any information about

CAROUSELS and all MERRY-GO-ROUNDS

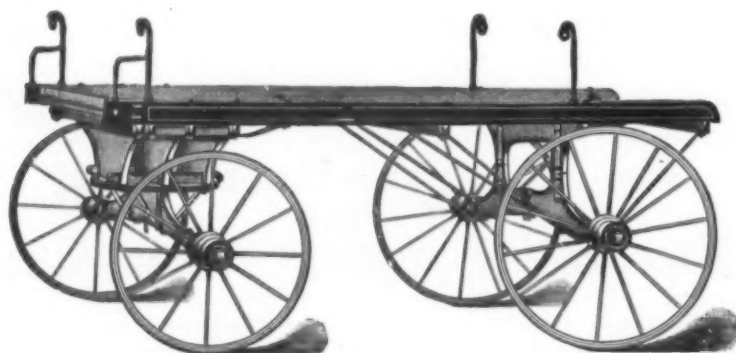
as to Prices, Sizes and Terms, Address

P. C. McINTIRE & CO., Charlotte, N. C.

Agents for following States: Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama,
Mississippi, Louisiana, Texas, Kentucky and Tennessee.

Cotton Oil & Fibre Co.
 Southern Office and Works: Norfolk, Va. Land Title Bldg: Philadelphia, Pa.
 Producers of
Crude and Refined Cotton Seed Oil,
 Cotton Seed Cake, Hulls, Mixed Hulls, Linters, Etc.
Prime Cotton Seed Meal "Cofco" Brand.
 Samples Free On Request. Net 100 Lbs. Fully Decorticated.
Guaranteed Analysis:

| | |
|------------------------|------------------------------|
| Ammonia..... | Not Less Than 8.50 Per Cent. |
| Nitrogen..... | 7 |
| Protein..... | 43 |
| Crude Oil and Fat..... | 9 to 10 |



THIS DRAY WE RECOMMEND FOR MERCHANTS, COTTON MILLS OR WAREHOUSES.
 MADE OF BEST SEASONED HICKORY AND OAK. PRICE LOW.
 Write for Price List and Catalogue.
W. P. HORNER WAGON MANUFACTURING CO.
 DANVILLE, VA.



Georgia Vitrified Brick & Clay Co.

Main Offices, Augusta, Ga.
 Works at Campania, Ga.

MANUFACTURERS OF

High-Grade Shale Paving Block and Brick, either repressed or un-repressed, round edge or square. We are ready to give a responsible guarantee of the splendid wearing qualities of these pavers.

We make the best Sewer Pipe in the South. All sizes, including 36" double strength Culvert Pipe.

Extra quality Fire Brick made from high-grade selected fire clays, a specialty. Special Brick made for special uses.

CAPACITY—

60,000 PAVERS PER DAY.

40,000 FIRE BRICK PER DAY.

10 CARLOADS SEWER PIPE PER DAY.



SOUTHERN COTTON OIL COMPANY,

HEAD OFFICE: 11 BROADWAY, NEW YORK.

Mills and Refineries in Georgia, North and South Carolina, Alabama, Tennessee, Arkansas, Louisiana and Texas.

MANUFACTURERS OF ALL

COTTON SEED PRODUCTS.

Oil Cake and Meal, Hulls, Linters, Soap Stock and Soap.

Refiners of

COTTON OIL,

All Grades.



Manufacturers of

LARD COMPOUND

AND

Wesson Cooking Oil.

Refineries Located at—Savannah, Augusta and Atlanta, Ga.; Charleston, S. C.; Charlotte, N. C.; Montgomery, Ala.; Houston, Tex.; New Orleans, La.; Memphis, Tenn., and Little Rock, Ark.



GOLD MEDALS
 AWARDED.

CHICAGO 1893.

PARIS 1900.

The American Cotton Oil Company,
 27 Beaver Street, New York City.

MANUFACTURERS AND REFINERS.

COTTONSEED PRODUCTS.
 Oil, Cake, Meal, Linters, Ashes, Hulls.

GOLD MEDALS
 AWARDED

BUFFALO 1901.

CHARLESTON 1902.



INTERNATIONAL CREOSOTING AND CONSTRUCTION COMPANY, WOOD PRESERVING.

Address all communications to
Office, Galveston, Texas.

Send for Pamphlet.

WORKS: BRAUMONT, TEXAS.
TEXARKANA, TEXAS.

Capacity 18,000,000 feet B. M. per Annum.
Capacity 57,300,000 feet B. M. per Annum.

CAPACITIES BASED ON
24-HOUR TREATMENT.

Timber treated with any of the best
processes now in use.

YELLOW PINE!

"WILKINS FILLS THE BILL" For Any Quantity, For Anywhere.

Weekly Steamer Shipments to New York City and
Vicinity; also Rail Facilities. Timbers: All Kinds
(Including Car Sills), Cross Ties. Kiln-Dried Saps.
Flooring, Ceiling, Etc. Tupelo Gum.

Van S. Wilkins Lumber Co.

Mills: BEAVER MEADOW, ALA.
EVANSTON, MISS.
PERDIDO, ALA.

Mobile, Ala. P. O. Box, 582.

PRICE & HEALD,

Manufacturers' Record Building,

BALTIMORE, MD.

Specialty—Maple Flooring for Cotton Mills.

Manufacturers and Dealers in Hardwoods, Poplar, Pine, Red Gum, etc.



Pat. May, 1899.

The Continuous Service Foot Valve

is provided with two sets of cylindrical
side screens, one within the other, and so
arranged that the outer one can be raised
to or above the surface of the water to
have refuse removed therefrom. The
inner screen is cleaned by the outer one
scraping down over it. Do you want to
hear more about this valve? Write for
Circular.

The NEWMAN MFG. CO.

26 Cortlandt Street, NEW YORK.



Very Often a Special Machine

is wanted for doing some extraordinary work which the ordinary
machine cannot do. We are in business for the specific purpose of
making a special machine of this kind, and can work from drawings
and specifications. We are completely equipped to meet your re-
quirements.

ECLIPSE MACHINE COMPANY, Vulcan Bldg., Cleveland, Ohio.

SAND PAPERS, ALL KINDS,



Used Twenty-Five Years
and Proven to be of
Superior Quality.

All our goods bear the Bear and Bull Trade-Mark.

BAEDER, ADAMSON & CO.,

730 Market St., Philadelphia.
97 Beekman St., New York.

143 Milk Street, Boston.
182 Lake Street, Chicago.

CHAIN

Common Proof Coil. Close and Stud Link. Switch, Check and Safety.
"BB," "BBB" and Dredge. Brake and Special.

EMPIRE CHAIN COMPANY,

2929-2939 Smallman St.,

PITTSBURG, PA.

MANUFACTURERS.

The Montgomery Lumber Mfg. Co.

Montgomery, Ala.

Consolidated plants of the Alabama
Hardwood Mfg. Co. and the Mont-
gomery Sash, Door & Blind
Co., greatly enlarged
and re-equipped.

MANUFACTURERS OF

Flooring, Ceiling, Finishing
Moulding, Sash, Doors
and Blinds.

Also Picker Sticks, Pick Borers, Sweep
Sticks, Plugs and Shuttle Blocks.

Prepared to execute promptly orders of any
magnitude at advantageous prices.
Special attention invited to our ability to
promptly fill orders for PICKER STICKS and kin-
dred articles in any quantities.
Correspondence solicited.

Burton Veneer Co.,

Manufacturers

Kiln Dried Gum, Poplar
and Spruce Pine.

1-32 to 5-16 thick.

Correspondence Solicited.

MONTGOMERY, ALA.

The Powhatan Clay Mfg. Co.,

RICHMOND, VA.

White, Buff, Speckled, Gray, Red and
Iron Spot Bricks.

In All Sizes and Shapes.

FIRE BRICK.

West Pascagoula

Creosoting Works.

West Pascagoula, Miss., U. S. A.

Situated on Pascagoula Bay and on the line of
the Louisville & Nashville Railroad. Established
1875. Orders for creosoted piles, telegraph poles,
cross-arms, electric conduits, paving blocks, sawed
ties and timber, promptly executed. Cylinders
120 feet long. Capacity one million feet per
month. A. B. C. code used. Cable address
Pierre, West Pascagoula, Miss. Address,

JOHN B. LINDSEY, Supt.

Bank and Office Fixtures.

The most complete assortment in the
country.

Regular goods always in stock; any-
thing special made to order.

Up-to-date plant equipped in the most
modern manner with latest improved
machinery, operated by experienced me-
chanics and supported by a large capital.

The result is but natural: You get what
you want, and at a price that none can
beat and only few can equal.

"Buy from the Makers."

M. L. HIMMEL & SON,

Baltimore, Md.

Write for Catalogue No. 2.

THE OHIO FIRE BRICK CO.

OAK HILL, OHIO.

Manufacturers of

High - Grade Fire Brick
for Blast Furnaces.

Ask us for delivered prices.

THE T. WILCE CO.

Polished Hardwood Flooring,
Kiln Dried, Bored and End-Matched.

22d and Throop Streets,

CHICAGO, ILL.

Maple Flooring for Cotton Mills, Factories, Warehouses and Buildings
for like purposes a special feature.

Delivered Quotations made to any point in the United States. Write
for prices and our descriptive Booklet.

The Red Cypress Lumber Company, Macon, Ga.

MANUFACTURERS

BAND SAWED CYPRESS, PINE, HARDWOOD,
SHINGLES AND LATHS.

We own 25,000 acres of Timber Land. Mill located near Gulf Coast. Capital Stock paid in \$200,000

EDWIN A. HALLAM,
President.

W. E. McCaw,
Vice-President.

WM. J. CRICHTON,
Secretary and Treasurer.

THOMAS FORMAN CO., DETROIT, MICH.

MANUFACTURERS OF

High Grade **FLOORING,** Kiln-Dried, Bored
Maple and Oak and End Matched

The most durable floor ever made, for Cotton Mills, Factories,
Warehouses and Office Buildings.

CORRESPONDENCE SOLICITED.

We can refer to many large buildings in the South which we have furnished with this material.

J. P. STETSON, President.

J. M. MATHEWS, Secy. and Treas.

STETSON LUMBER CO., Macon, Ga.

Manufacturers and Wholesale Dealers in

Rough and Dressed Long Leaf Yellow Pine.
Car Stock and Bridge Timbers a Specialty.

CAMERON STEAM PUMPS



Are the most durable, most effective and economical in the use of steam. Not having any outside valve gear, they are the best and most reliable for

Boiler Feeding, Mines, Refineries, Breweries, Tanneries, Irrigating, Fire Purposes, Railroad and Filling Tanks.

You ought to know more about them by consulting our 112-page catalogue.

A. S. CAMERON STEAM PUMP WORKS,
Foot of East 23d Street, NEW YORK.



MARSH STEAM PUMPS

MANUFACTURED BY

AMERICAN STEAM PUMP COMPANY,

SIMPLEX, NOT DUPLEX.

"To be simple is to be great."

Tobin Bronze Piston Rods.
Phosphor Bronze Valves.
Valve Seats, Stuffing Boxes and Removable Water Cylinder Linings.

Write for Catalogue No. 11.

MINIMUM
OF
WEIGHT,
WEAR
AND
WASTE.

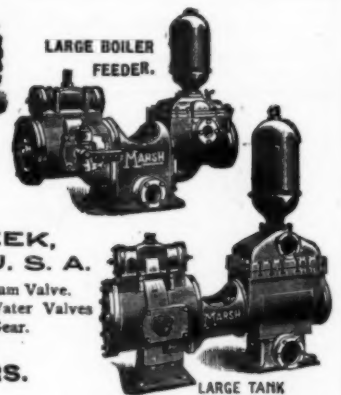


MAXIMUM
OF
STRENGTH
SIMPLICITY
AND
SERVICE.

BATTLE CREEK, MICHIGAN, U. S. A.

Patent Self-Governing Steam Valve.
Patent Easy-Seating Water Valves
No Outside Valve Gear.

50,000 SOLD IN THIRTEEN YEARS.



NEW YORK, 165 Fulton St.
BOSTON, 81 Milk St.
PROVIDENCE, 31 Eddy St.
CHICAGO, 32-34 W. Randolph St.
ST. LOUIS, 718-724 Charles St.

PITTSBURG, 11 Market St.
NEW ORLEANS, 291-293 Magazine St.
MEMPHIS, 226 Front St.
KANSAS CITY, 408-412 W. Fifth St.
OMAHA, 1014-1018 Douglas St.

DALLAS, 177-179 Elm St.
SAN FRANCISCO, 31 Main St.
LOS ANGELES, CAL., 334-338 N. Main St.
PORTLAND, ORE., 85 First St.
SEATTLE, WASH., 119 Jackson St.

CLEVELAND, 95-103 St. Clair St.
DENVER, 1621-1629 17th St.
DETROIT, 97-101 Woodbridge St., West.
NORFOLK, 74 Commercial Place.
PHILADELPHIA, 1744 Market St.

MONTGOMERY, foot of Coosa St.
SAVANNAH, 126-130 Bay St.
CINCINNATI, 5-3 Main St.
ROCHESTER, 284-272 State St.
TOLEDO, 1-9 St. Clair St.

ALBERGER COOLING TOWERS

IMPROVED CONDENSING APPARATUS VACUUM PUMPING MACHINERY

Send for Illustrated Catalogue.

ALBERGER CONDENSER COMPANY, 95 Liberty St., NEW YORK



THE COOK WELL ...CO...

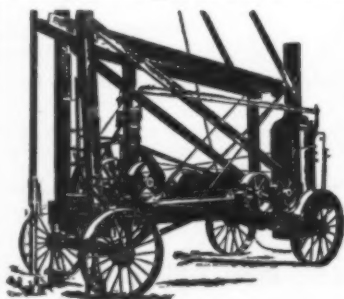
ST. LOUIS, MO., U. S. A.

Cook's System of Wells
FOR
Cities, Towns, Villages, Railroads,
Ice Plants, Breweries and
Manufacturers.

Cook's Patent Brass Tube
Well Strainer.

Cook's Deep Well
Pumping Engines.

Estimates furnished upon application. Write for Catalogue and Prices.



WE ARE MANUFACTURERS OF

Portable Drilling Machinery,

Run by Steam, Gasoline or Horse-power;
for Water, Oil or Gas Wells, any depth.
Forty-two different styles. Send for
Catalog "A."

KELLY & TANEYHILL CO.

18 Chestnut Street, WATERLOO, IOWA.

PERRY ANDREWS & BRO.

**ARTESIAN
AND
OIL WELL CONTRACTORS
AND
DRILLERS.**

Have had years of experience
in Oil Well Drilling.

Porter Place,

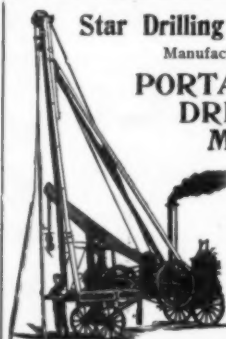
ATLANTA, GA.



Star Drilling Machine Co.

Manufacturers of

**PORTABLE
DRILLING
MACHINES**



For Water, Oil
or Gas Wells.
Send for Catalogue
"D."

104 Fulton St.,
New York.

Factory at
AKRON, OHIO.
Cable, "Drol."
Tel., 3440 B John.

ARTESIAN WELLS Any depth from 10
to 2000 feet, in any
part of the country.

Soundings made for Foundations.
Test Boring for Water.

Write for references and particulars.

ISAAC H. FORD, 104 Fulton St., New York.
20 Years' Experience.

Well Drilling Machines



Over 70 sizes and
either deep or
any kind of soil
on wheels or on
gines or horse

styles, for drilling
shallow wells in
or rock. Mounted
stills. With en
powers. Strong
simple, durable.
Any mechanic
can operate
them. Send
for catalog.

**WILLIAMS BROS.,
ITHACA, N. Y.**

GET THE LATEST
**DEEP WELL
Pumping Machinery**

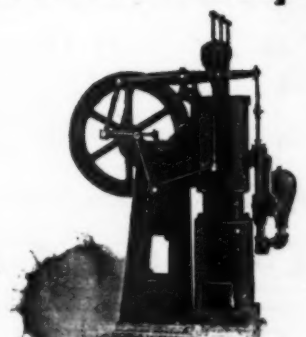
of large and small
capacities.

STEAM AND POWER PUMPS

The most economical
Deep Well Pumps on
the market.

Downie Pump Co., Box 21, Downsville, Pa.

DENNEY IMPROVED Rider & Ericsson Hot Air Pumps.



**Reliable, Economical,
Safe and Noiseless.**

Always ready for service. Can be operated by
any one. Use any kind of fuel. Built for years by

**AMERICAN MACHINE CO.,
Wilmington, Del.**

Agents—The Tribune Hardware Specialty Co.,
105 W. Fayette St., Baltimore, Md.
Send for Catalogue R.

LET US HAVE YOUR SPECIFICATIONS
of SINGLE DUPLEX & ROTATIVE
STEAM AND POWER

PUMPS
THE
JOHN H. MCGOWAN CO.
CINCINNATI

SIMPLE COMPOUND & COMPOUND CONDENSING-
ELEVATOR & WATER WORKS-
PUMPING ENGINES

Water Supply

For Towns, Cities, Mills and
Industries of every kind.
Well Systems and Air Lift
Plants Installed Complete.

The BACON AIR LIFT CO.

82 William St., NEW YORK

Sole Owners and Manufacturers of the
Simple and Compound BACON
AIR LIFT PUMPS

Pair

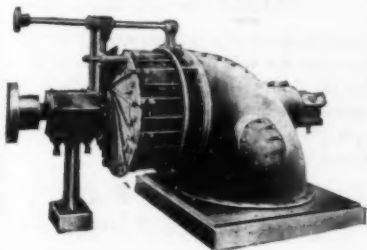
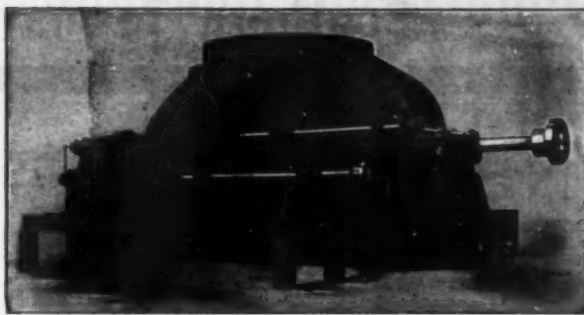
McCormick Turbines,

4000 H. P., 72 ft. head, arranged to drive generator and a single turbine to drive exciter. Two settings like cut and 3 each of 5300 H. P., built for the Hudson River Water Power Company for their Spier Falls plant and 14 pairs 51 inch wheels for their plant at Mechanicsville, N. Y.

S. MORGAN SMITH COMPANY,

York, Pa., U. S. A.

Write for Catalogue if contemplating purchase of Turbines.



SAMSON TURBINE

The EASE and QUICKNESS with which the gates on the SAMSON are operated make that turbine especially desirable for use where the SPEED of the turbine is to be controlled by a GOVERNOR. CLOSE REGULATION is assured.

WRITE DEPT. "A-2" FOR CATALOG

THE JAMES LEFFEL & CO, Springfield, Ohio, U. S. A

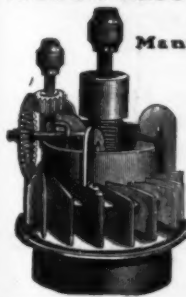
ERIE PUMP & ENGINE CO.
ERIE, PA., U. S. A.

VERTICAL ENGINES,

CENTRIFUGAL PUMPS.
Horizontal, Vertical, Direct
Connected. Write for prices.
Prompt Delivery.



RISDON-ALCOTT TURBINE CO., Mount Holly, N. J., U. S. A.



Manufacture

Turbines

to meet all conditions, either on a vertical or a horizontal shaft. Possessing high speed, great wearing qualities and easy to control. Adapted for any water power.

Risdon Cylinder and Register Gate Turbines.

| Tests in | Full Gate | 3/4 | 1/2 | 1/4 | Average |
|----------------|-----------|-------|-------|-------|---------|
| Holyoke Flume: | .8694 | .8472 | .8014 | .7001 | .8195 |

Alcott's High-Duty Turbine,

High Efficiency, Easy Working Gate. Simple, Durable.

Taylor Sleeve-Gate Turbine.

Largest Power ever obtained from a wheel of the same dimensions. Are manufactured solely by us. If interested let us tell you more about them.

Pumps Day and Night Without Cost.



The principle of the hydraulic ram has been developed and we offer in the **NIAGARA HYDRAULIC RAM** a machine which will deliver from 1000 to 250,000 gallons a day, according to size, without cost for fuel or attention. Will work anywhere that streams, springs or running water are to be found. Simplicity of construction, small waste and large delivery of water make it an ideal pumping machine for any purpose. Agents wanted. Write for illustrated catalogue free.

Niagara Hydraulic Engine Co., Box 78, Chester, Pa.

The LUDLOW VALVE MFG. CO.

TROY, N. Y., U. S. A.

Manufacturers of Fire Hydrants and Slide Gate Valves of All Sizes and for all Pressures and Purposes.

LUDLOW GOODS ARE RELIABLE.

SPECIFY AND INSIST UPON HAVING THEM.

None are Genuine without Our Name, which appears on every Valve and Hydrant we make and means

STANDARD OF MERIT.

Valves for Extreme High-Pressure Steam, Water, Gas, Oil, Ammonia, etc., a Specialty.

SEND FOR CATALOGUE.



R. D. WOOD & CO.

400 Chestnut Street, PHILADELPHIA, PA.

CENTRIFUGAL PUMPS

ALL SIZES. BELT DRIVEN AND DIRECT CONNECTED.

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water for Condensers, &c., &c.



TAYLOR SPIRAL RIVETED PIPE.

FOR Water Lines, Irrigation Centrifugal Pumps and Exhaust Steam Systems, **SPIRAL RIVETED PIPE** is especially adapted. Allow us to send catalogue and quote prices.

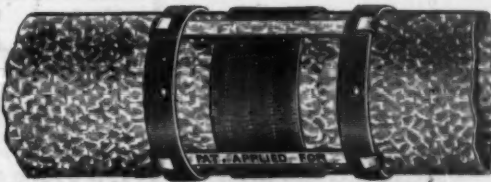
AMERICAN SPIRAL PIPE WORKS,

Main Office and Works, CHICAGO. New York Office, 26 Cortlandt St.

TALLERDAY'S SHEET STEEL WATER PIPE FOR MINE OR IRRIGATION USE.

Transportation and connecting in difficult places is EASY. Why not save a lot of money on long lines by using this pipe?

WE BUILD TANKS FOR ALL PURPOSES



Made in single sheets in lengths of 10 ft. No. 12 and lighter. Heavy "ulvert" Pipe a Specialty.

Write us stating requirements.

TALLERDAY STEEL PIPE & TANK CO., WATERLOO, IOWA.

FIRE HYDRANTS. STOP VALVES. GENERAL FOUNDRY WORK.



LYNCHBURG VA.

GRITTY LIQUIDS



which would soon destroy any other form of steam pump, is handled with ease by the **PULSOMETER STEAM PUMP.**

Pulsometer Steam Pump Co.

125 Greenwich St., NEW YORK.

HUGHES SPECIALTY WELL DRILLING CO. Artesian and Oil Well Contractors

Wells drilled 3" to any diameter; 60' to 3000' deep. Satisfaction guaranteed. Deep Well Pumping Plants Installed. Air Lift System a Specialty.

OFFICE AND WAREHOUSE, S. E. Cor. Ashley Ave. and Montague Street, **CHARLESTON, S. C.**

DAVIS FOUNDRY AND MACHINE WORKS.

ROME, GA.

DAVIS

Double Turbine WATER WHEEL



Beyond all question one of the Best Wheels on the market, and is fully guaranteed. We are prepared to bid on furnishing Water Wheels, &c., for complete Power Plants of any capacity. Also Gearing, Pulleys, Hangers, Shafting, &c.



Southern Towns Inviting Factories.

RAYNE, LA.

A prosperous town drawing support from the three great staples of the South—Cotton, Sugar and Rice. A centre for Poultry and Truck with considerable manufacturing interests, wants more manufactures and offers

Free Sites. Cheap Fuel.
Only 14 Miles From Jennings Oil Field.
Exemption From Taxation. Cash Interest.
Wants Especially a Small COTTON-OIL MILL.

—ADDRESS—

C.W. LYMAN, Secretary Progressive Union, Rayne, Acadia Parish, La.

ATHENS, GA.

Within forty miles of the Blue Ridge Mountains.
 Population 14,000.

Offers unequalled Inducements to Home-Seekers and Investors.

Climate unsurpassed, health unequalled. Educational Center of Georgia. Railroad facilities ample. Cotton receipts 80,000 bales per annum. Building material cheap. Labor abundant. Special inducements to secure new manufactures. Address

T. W. REED, Sec'y Athens Chamber of Commerce.

LOUISIANA'S INVITATION.

Provisions of Article 230 of the Constitution of the State of Louisiana.

"There shall also be exempt from parochial and municipal taxation for a period of ten years from the first day of January, 1900, the capital, machinery and other property employed in mining operations and in the manufacture of textile fabrics, yarns, rope, cordage, leather, shoes, harness, saddlery, hats, clothing, flour, machinery, articles of tin, copper and sheet iron, agricultural implements, and furniture and other articles of wood, marble or stone; soap, stationery, ink and paper, boat building and fertilizers and chemicals; provided, that not less than five hands are employed in any one factory."

LAFORCHE PROGRESSIVE UNION, Thibodaux, La.

Free Land.

We are the owners of 67 acres of fine level land, two miles from Lynchburg, on the banks of the James and on the tracks of the C. & O. We are also the owners of unlimited power, hydraulic and electric. Hydraulic, our great dam, now completed, will supply 4000 H. P.; our electric plant, now under construction, will give large additional power.

We will give you, Mr. Manufacturer, as much of our 67 acres as you need to build your plant on, for the purpose of selling you a part of our power at a low rate. We'll help you in every way we can.

Lynchburg is a hustler—she has three lines of railway—unlimited and cheap power—shrewd and far-seeing business men—good street railway facilities—good papers—and public men most liberal to new enterprises.

We'll give you our lands and our help if you'll come here.

Lynchburg Traction & Light Co.

Lynchburg, Va.

R. D. Apperson, Pres.

SITUATIONS WANTED.

Advertisements under this head will be inserted at the rate of one cent a word for each insertion.

WRITE TO US

For Competent

TECHNICAL MEN

For all classes of work.

5,000 positions filled in 10 years.

Engineering Agency,
 120 Menadnock Block, CHICAGO.

Merchants & Miners'

Transportation Company's

STEAMSHIP LINES.

For BOSTON and the EAST—Every Monday, Tuesday, Thursday and Saturday at 6 P. M.

For PROVIDENCE and the EAST—Every Wednesday, Friday and Sunday at 6 P. M.

For SAVANNAH and the SOUTH—Every Tuesday, Thursday and Saturday at 6 P. M.

For NEWPORT NEWS and NORFOLK—Daily at 6 P. M.

Accommodations and Cuisine Unequalled. Freight handled with care and dispatch.

C. R. GILLINGHAM, Agent, Long Dock.

W. F. TURNER, G. P. A.

C. S. HOSKINS, G. P. A.

A. D. STEBBINS, G. M.

J. C. WHITNEY, 2d V. P. and T. M.

General Offices—214 E. German St., Balto., Md.

York Safe & Lock Co.

MANUFACTURERS OF

Safes and Vaults

York, Pa.

Baltimore, Md.

CHESAPEAKE STEAMSHIP COMPANY.

"Chesapeake Line."

Elegant passenger steamers AUGUSTA and ATLANTA, for Old Point Comfort and Norfolk, Va. Steamers leave Baltimore daily (except Sunday) at 5 P. M., and arrive West Point 7.30 A. M., and Richmond at 9.15 A. M.

"York River Line."

Elegant passenger steamers CHARLOTTE and BALTIMORE, for West Point and Richmond, Va. Steamers leave Baltimore Daily (except Sunday) at 5 P. M., and arrive West Point 7.30 A. M., and Richmond at 9.15 A. M.

Steamers leave Baltimore from Piers 18 and 19 Light Street Wharf.

Through tickets to all points can be secured, baggage checked and staterooms reserved from the City Ticket Office, Nos. 109, 120 and 127 E. Baltimore Street or the General Offices, 330 Light Street, Baltimore, Md.

REUBEN FOSTER, E. J. CHISM,
 General Manager. General Pass. Agent.
 T. H. McDANNELL, Traveling Passenger Agt.

BALTIMORE STEAM PACKET CO.

OLD AND RELIABLE

BAY LINE.

CARRYING U. S. MAIL.

Elegant Steamer Daily, except Sunday, from "BAY LINE" PIER, 10-12 LIGHT STREET, at 4.30 P. M. for OLD POINT COMFORT, NORFOLK, PORTSMOUTH AND ALL PORTS SOUTH. Connects at Old Point Comfort, Va., with O. & O. R. R. for Richmond. Connects at Portsmouth with Seaboard Air Line, solid train Portsmouth to Atlanta. At Norfolk, connects with Atlantic Coast Line, Norfolk & Carolina, Norfolk & Southern and Norfolk & Western Railroads, and with Old Dominion Line for New Bern and Washington, N. C.

Meals on the European plan. Luxurious Staterooms, Electric Lights, Steam Heat. Berths Free. Reserve staterooms in advance at Bay Line Ticket Office, 103 East Baltimore St.; Albion's, 18 N. Charles St., and Seaboard Air Line Office, Continental Trust Bldg., Telephone O. & P. 1485; Maryland, Courtland.

EMMET BROWN, General Pass. Agent.
 RAY COMPTON, General Freight Agent.
 JOHN R. SHERWOOD, V. P. and Gen. Mgr.

INVESTIGATE

That means examine the

STIEFF
PIANOS

as well as others. You will find in it merits that deserve your consideration.

You Know Its Reputation.

You know it's made at home.
 You know your friends use and like it.
 You know it's been established since 1849.

If You Can't Pay Cash, Buy and Pay Monthly
 OTHER PIANOS—New and Second-Hand.

Uprights—\$100—\$150—etc., up.
 Squares—\$200—\$250—up.
 Organs—\$25—up.

STIEFF'S, 9 N. Liberty St.

BALTIMORE, MD.

The Pump that Pumps

MYERS

Glass Valve

SPRAY PUMPS

Double-acting, Lift, Power, Tank and Spray

PUMPS

Store Ladders, etc., Barn Door Hangers

HAY TOOLS

of all kinds. Write for Cl's and Prices

F. E. MYERS & BRO. Ashland, O.

CAST IRON PIPE

The Dimmick Pipe Co.
 Makers of VALVES and HYDRANTS. Special Castings of Every Description, Birmingham, Ala.

New York, 39 Broadway. Philadelphia, 1061 Drexel Bldg.
 San Francisco, 31 New Montgomery St. St. Louis, 20 Equitable Bldg.
 Pittsburg, 513 Pittsburg Bldg.

UNITED STATES CAST IRON PIPE & FOUNDRY COMPANY,
 Railroad and Township Culverts, Flange Pipe and Special Castings of every description.

CAST IRON PIPE

MANUFACTURERS OF
 All Sizes, 8 to 72-in. Internal Diameter.

Gen. Offices: Chicago, Ill. Eastern Offices: Phila. Southern Offices: Chattanooga, Tenn.



"A Good Book is
 A Good Friend"

HAWKINS' TEXT BOOKS

For Practical Engineers

Consisting of seven handsomely bound volumes, treating on STEAM, ELECTRICAL ENGINEERING and MECHANICAL DRAWING for home study and reference, which are supplied on monthly payments. No engineer can afford to be without this library.

Write to-day for free catalog and easy payment offer.

THEO. AUDEL & CO.
 63 Fifth Avenue, New York City.

WE WANT TO REPRESENT MANUFACTURERS

for all classes of machinery and building material for this immediate vicinity and for the Southern States, and solicit your account as distributing agents.

A good opportunity is offered by us to make quick sales. Address

J. J. ROBERTS & CO.

NEWPORT NEWS, VA.

--- THE ---

Southern Hotel,

South Calvert near Baltimore Street,
 BALTIMORE, MD.

A strictly high grade European hotel for gentlemen.

Appointments and service the very best.

RATES:

\$1.00, \$1.50 and \$2.00, with Private Bath.

Copper Works.



**Turpentine Stills,
 And General Metal Workers.**

McMILLAN BROS.
 Fayetteville,
 N. C.
 Savannah, Ga.
 Jacksonville,
 Fla.
 McMILLAN BROS.
 COMPANY,
 Mobile, Ala.
 Mgr's of

SECOND HAND

Printing Presses, Paper Cutters.

The Cheapest Place to Buy

SPACES and QUADS.

Write for Prices and Discounts.

SPENCER & HALL,

Type Founders and Electrotypers,
 BALTIMORE, MD.

HENRY R. WORTHINGTON

PUMPING MACHINERY.

Marine Air and Feed Pumps a Specialty.

Boston Cleveland
 Chicago Pittsburg
 Philadelphia Atlanta
 St. Louis San Francisco
 Butte 116 Liberty St., New York, New Orleans

WATER METERS

Railroads Inviting Factories.

CAHABA COAL FIELDS

with an output of

10,000 TONS PER DAY

would not be exhausted in a thousand years, according to the Alabama State Geological Survey.

These fields embrace 430 square miles, with fifty different seams of coal and a combined thickness of from seventy to one hundred feet of coal.

The extension of the Seaboard makes possible the development of these fields, and a better investment for capital on a large scale cannot be found.

For maps and description of specific properties address

J. W. WHITE,

General Industrial Agent,

Portsmouth, Va.

SEABOARD AIR LINE RAILWAY.

YOUR ATTENTION, PLEASE!

Virginia

offers a number of fine openings in the line of

**MINING,
MANUFACTURING
and
FARMING.**

Along the lines of the

Norfolk and Western Railway

are hundreds of towns extending you a hearty welcome.

Address, for pamphlets and information,
W. B. BEVILL, PAUL SCHERER,
G. P. A. Agt. Lands & Industries.
ROANOKE, VA.

Dearborn Junior Typewriter Table Cabinet.



Solid Golden Oak, 42 ins. long, 24 ins. deep. Guaranteed to be the most complete Typewriter Table Cabinet ever sold at the price. Attachment for holding note book effective and invaluable. Shipped to responsible parties on approval for \$12.00, freight prepaid east of the Rocky Mountains. What more can we offer? Write for catalogue of Dearborn Typewriter Cabinets.

DEARBORN DESK COMPANY,

SOLE AGENTS OF TYPEWRITER CABINETS EXCLUSIVELY.
1921 First Ave., Birmingham, Ala.
200 Monroe Street, Chicago, Ill.

AMERICAN TYPE FOUNDERS CO.
ORIGINATORS OF
**TYPE STYLES
ELECTROTYPES**
BEST EQUIPPED PLANT IN THE SOUTH
NICKELTYPES
FOR HALF TONES. SOMETHING NEW. BIG
SAVING IN THE PRESSWORK. MAK-
ING READY MADE EASY
QUADS
WRITE FOR SPECIAL PRICES AND DISCOUNTS
COR. WATER AND FREDERICK STS.
BALTIMORE, MD.
CHAS. S. CONNER, MANAGER.

Come to West Virginia.

Why?

It has more and a greater variety of undeveloped resources close to Eastern and Western markets than any other State. The WEST VIRGINIA CENTRAL & PITTSBURG RAILWAY penetrates the heart of the virgin timber forests and coal deposits. Cheap fuel, cheap raw material and unsurpassed railway facilities make that territory most desirable for manufacturing industries. For information in regard to timber and coal lands and manufacturing sites address

HOWARD SUTHERLAND,

Gen'l Land Agent, ELKINS, W. VA.



**"THE ALLISON"
INVALID CHAIR.**

Strong, Light, Comfortable,
Easily Adjusted.
Liberal Discount to the Trade.
Catalogue "B" Free.

W. D. ALLISON CO.
995 N. Alabama St., Indianapolis.



Splendid Opportunities For Profitable Investments.

MANUFACTURERS

before locating elsewhere should examine the

Excellent Locations for Factories of All Kinds

existing along the

Southern Railway and Mobile & Ohio Railroad.

Abundance of raw material, cheap fuel, plenty of good labor and unsurpassed transportation facilities tend to make the territory traversed by these lines superior for the successful investment of capital in

**Textile Mills, Lumber Mills,
Furniture Factories,
Iron and Steel Works, Etc.**

For further and detailed information address,

M. V. RICHARDS,

Washington, D. C.

Land and Industrial Agent:

**SOUTHERN RAILWAY and
MOBILE & OHIO RAILROAD.**

OPPORTUNITIES

for the location of industries are plentiful in the sections of country traversed by the various lines of the St. Louis & San Francisco Railroad, and the resources are so diversified as to offer excellent chances for many kinds of industries.

Cotton Mills

are especially needed throughout the Southwest, as the very finest quality of long staple cotton is raised, labor conditions are of the best and fuel in most sections is cheap. Excellent inducements, such as free sites, bonuses, subscriptions to stock, etc., will also be given by a number of cities and towns along the



to secure cotton mills, knitting mills and all kinds of textile industries.

Send for copy of publication entitled "Opportunities," giving detailed information about the towns and cities traversed by the Frisco System, as well as openings for all classes of industries.

M. SCHULTER, Industrial Commissioner,

Commercial Building.

ST. LOUIS, MO.

THE GENERAL ELECTRIC COMPANY'S ENCLOSED ARC LAMPS



Are Satisfactorily Lighting Manufacturing Establishments
of Every Kind. Write for Catalogue.

GENERAL OFFICES,

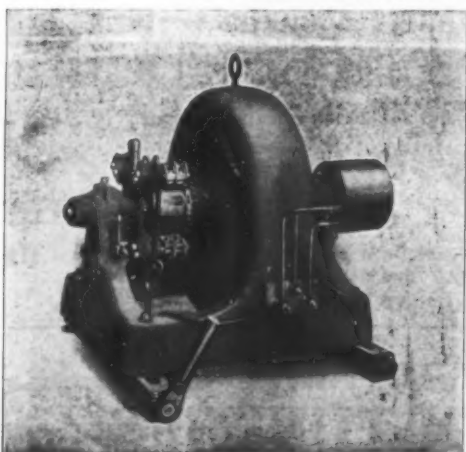
SCHENECTADY, N. Y.

New York Office, 44 Broad Street.

Sales Offices in All Large Cities.

"Ours is the Light of the World."

KENTUCKY ELECTRICAL CO., Incorporated,
MANUFACTURERS OF
Incandescent Lamps, Motors and Dynamos.
OWENSBORO, KY.



Our goods are guaranteed, our shipments prompt. We do not belong to the combine.
Write for prices.

The S. B. Alexander, Jr., Co.
Engineers and Manufacturers
CHARLOTTE, N. C.

Wholesale and Retail Electrical Supply Dealers. Largest stock
of Electrical Supplies carried south of New York. TWENTY-
FIVE thousand Sawyer-Man Lamps carried in stock.

Textile, Engineers', Machinists' and Electrical Supplies.

CONTRACTORS
FOR ELECTRICAL
CONSTRUCTION
OF EVERY
DESCRIPTION.

PIEDMONT
ELECTRIC
COMPANY
ASHEVILLE, N.C.

JOBBER IN
ELECTRICAL
SUPPLIES
AND
FIXTURES.

GAS, ELECTRIC
AND COMBINATION

**Chandelier
Manufacturers,**

CATALOGUE ON
APPLICATION.

CHANDELIERS FOR FINE
RESIDENCES AND LARGE
BUILDINGS

OUR SPECIALTY.

ORIGINAL DESIGNS FURNISHED.

Chas. Polacheck & Bro. Co.

185 and 187 3d Street,
MILWAUKEE, WIS.



**International
Mercantile Agency,**
346 Broadway,
NEW YORK CITY.

A rating book which rates all merchants of the
United States and Canada; no blank ratings.
Estimates of capital are made within a narrower
range than ever before attempted; HABIT OF
PAYMENT is indicated in addition to, though
absolutely independent of, the "capital, credit
or standing rating." This is a vital feature
heretofore uncovered by any agency book. We
rate from "nothing" to ten millions and over.
SPECIAL REPORTS promptly furnished.

BALTIMORE OFFICES,
309-319 The Calvert.

Subscribe to the Manufacturers' Record.
Price \$4 a year, or six months for \$2.

**Makes Drop Lights
More Useful**

The Pacific Cord Adjuster

for adjusting the cord of drop
lights. Particularly adapted to use
over machines and desks where the
cord must be adjusted to meet cer-
tain conditions. The balance can
be easily changed for shades of
different weights.

We make 35 Styles of Desk and
Office Lamps.

Send for Catalogue.

PACIFIC ELECTRIC CO.
May Ave., La Crosse, Wis.



**Electrical
Supplies**

A complete line of Electric Light, Bell
and Telephone Supplies and Line Material
of every description—in Savannah stock—
at lowest market prices.

Electric Supply Co.
Savannah, Ga.

**THE ALLEGHANY
PIN & BRACKET CO.**

COVINGTON, VA.

Manufacturers of

**Insulator Pins
and Brackets.**

The largest output of any factory in America.

Write for quotations.



Morse Automatic Lamp Adjuster for Mills, Facto-
ries and Shops. We also manufacture the Webster
Angle Adjuster, Combination Shades and Lamp
Guards. Send for Illustrated Price List.
INCANDESCENT ELECTRIC LIGHT MANIPULATOR CO
116 Bedford Street, Boston, Mass.

W. H. JENKS,
Electrical Contractor,

AND DEALER IN

ELECTRICAL SUPPLIES OF EVERY
DESCRIPTION.

617 E. Main Street, Richmond, Va.

EVERBEST

**Jandus
Arc
Lamps**

The only lamp that
will burn 150 hours
without trimming.

Your mistake if you
don't investigate.

Bulletin and full in-
formation from

**Ewing-Merkle
Electric Co.,**
St. Louis.

**SPRAGUE
CANNING MACHINERY**

COMPANY

48 RIVER STREET, CHICAGO, ILL.

WHEN IN NEED OF

Insulator Pins, Red Cedar or Chestnut
Telephone Poles, or Red Cedar
of Any Description,

—do not fail to correspond with—

HOUSTON & LIGGETT, Lewisburg, Tenn.

Nickel Plating Outfits.

POLISHING MACHINERY.
CHEMICALS.
DYNAMOS.

THE HANSON & VAN WINKLE CO.
CHICAGO NEWARK, N. J.
ADDRESS DEPARTMENT W

S
S
Y.

ERY

estnut
lar

g, Tenn.

S.
CO.



Triumph
Marine Set.

Triumph Marine Type Generators

are compact, efficient and especially adapted for small lighting plants. Require but little floor space. Slow speed insures small wear and long life for all parts. No belts; therefore no dirt, nor consequent loss of power.

Ask for Bulletin "MR."

Triumph Electric Co., Cincinnati, Ohio, U. S. A.

STANDARD ELECTRIC CO.

Main Office, NORFOLK, VA.

BRANCH OFFICE, CHARLOTTE, N. C.

Supplies

WE SELL EVERYTHING ELECTRICAL, which includes Supplies for Lighting, Combination Fixtures of every description, Telephones, Switchboards and all Accessories, wholesale and retail.

Construction

We will furnish your Mill, Shop or Factory, with a complete Electrical Equipment and GUARANTEE our work.

Railways

WE ARE ELECTRICAL ENGINEERS and as such finance the building of and also equip new Electric Railways. You can purchase from us a complete line of Electric Railway Supplies.

"A Word to the Wise is Sufficient"

FLORIDA ELECTRIC CO. Electrical and General Engineers. JACKSONVILLE, FLA.

Southern Agents for
De Laval Steam Turbines.
Curran's Electric Elevators.

A complete line of Motors, Dynamos and Electrical Supplies of all kinds constantly on hand.

"ALL THINGS ELECTRICAL"

Largest Stock of General Supplies in South.

—Agents for—

Duncan Meter Co., Sawyer Man Inc. Lamp Co., Hornet Lamp Co.
Westinghouse Elec. & Mfg. Co., Dorman Telephone Co.

Write for our catalogue and prices.

ELECTRICAL MATERIAL CO., BALTIMORE, MARYLAND.

—"RUNS LIKE A CLOCK."—

Acetylene Gas.

Best Illuminant in the World for Factory, Business, Home and Town Lighting.

Davis Carbide Feed Generators ARE THE BEST.

Because they have independent power for feeding and use lump carbide, which yields more and better gas than finely crushed. In successful use in 25 States and Canada. Special inducements for introductory Generators.

TESTIMONIAL:

LOUISVILLE, KY., AUG. 28, 1904.
The 15 Davis Machines we have sold and installed are working perfectly and have made us many friends.
DAYLIGHT ACETYLENE GAS CO.

Energetic, Reputable Business Men Should Write for our Liberal Proposition for Exclusive Sales Territory.

SEND FOR OUR NEW CATALOGUE

Davis Acetylene Co., ELKHART, IND.

WESCO.

WESCO.

Everything Electrical

Largest and most complete stock of Electrical Supplies and Construction Material in U. S.

We can furnish anything pertaining to the construction, operation, maintenance or equipment of

Electric Railways, Isolated Plants and Central Stations, Telephone Lines and Exchanges.

The Wesco Supply Co.

Get Our Catalogues.

ST. LOUIS, U. S. A.

BEFORE CONTRACTING FOR INCANDESCENT LAMPS

GET THE STERLING SPECIAL LITERATURE.

STERLING ELECTRICAL MFG. CO. WARREN, OHIO.

THE BENBOW

Adjustable Swinging Telephone Bracket.

Fits any style of Phone, Desk, Wall or Partition. Endorsed and used by Telephone Companies.

For Sale by the Trade.

Write for Price List.

Agents Wanted.

THE BENBOW COMPANY,
MANUFACTURERS.

14 South Broad St.,

PHILADELPHIA, PA.



Motors.

COMMERCIAL ELECTRIC COMPANY,
INDIANAPOLIS, IND.

Dynamos.

T CO.

, D. C.

ase your

ctor

best
at
cool
auto
wide
space
any
and

ple
partly
only

of
man
Al
er

Agents
AGO

DD
RD
ES

careful
entry. All
capacities.

m.

for cata-
money.

pany

6

IA.

Chaise
and Tongue
Chaise.
you Stay
wood Brakes
ink Blue
Colored.